



THE MAGAZINE FOR INFORMATION EXECUTIVES

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Who Should You Trust?

Outsourcing Your IT Assets

A CIO Buyers Guide

BEGINNING ON PAGE 46

ALSO INSIDE
Eighth Annual
Survey of
CIOs, Bosses
and Peers

PAGE 62

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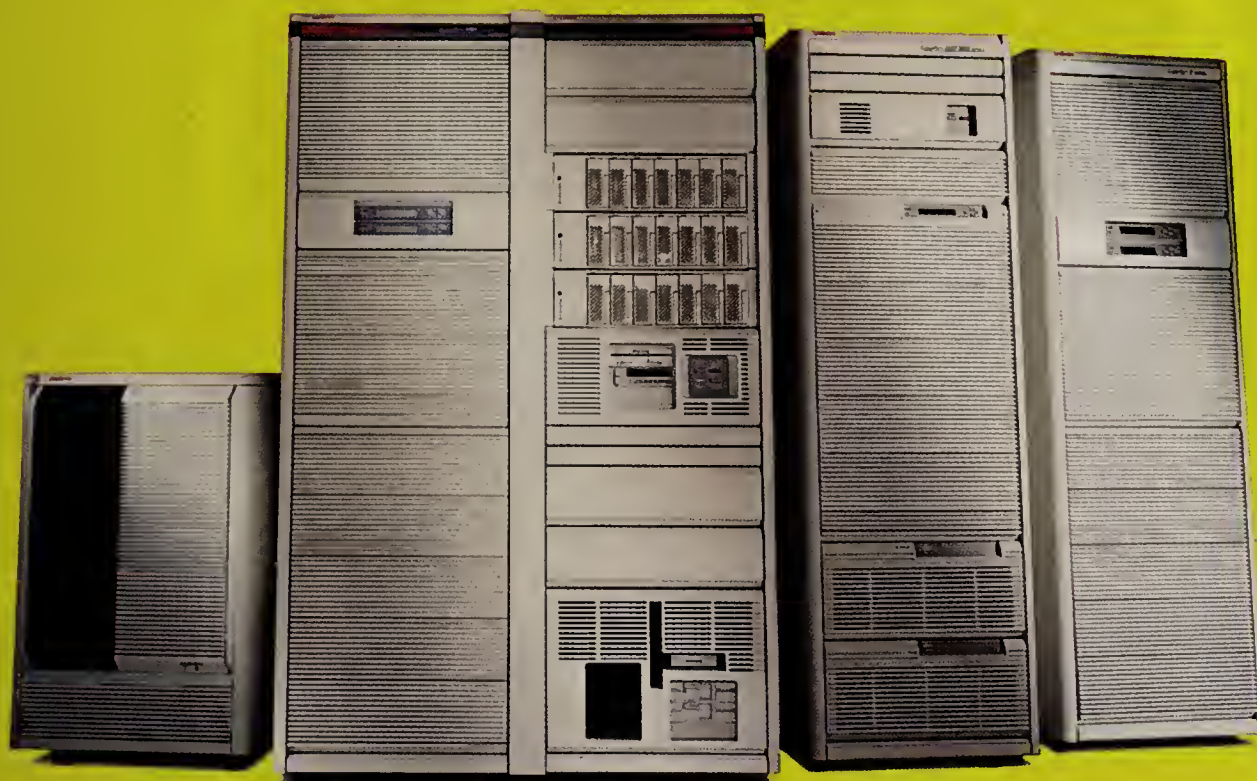
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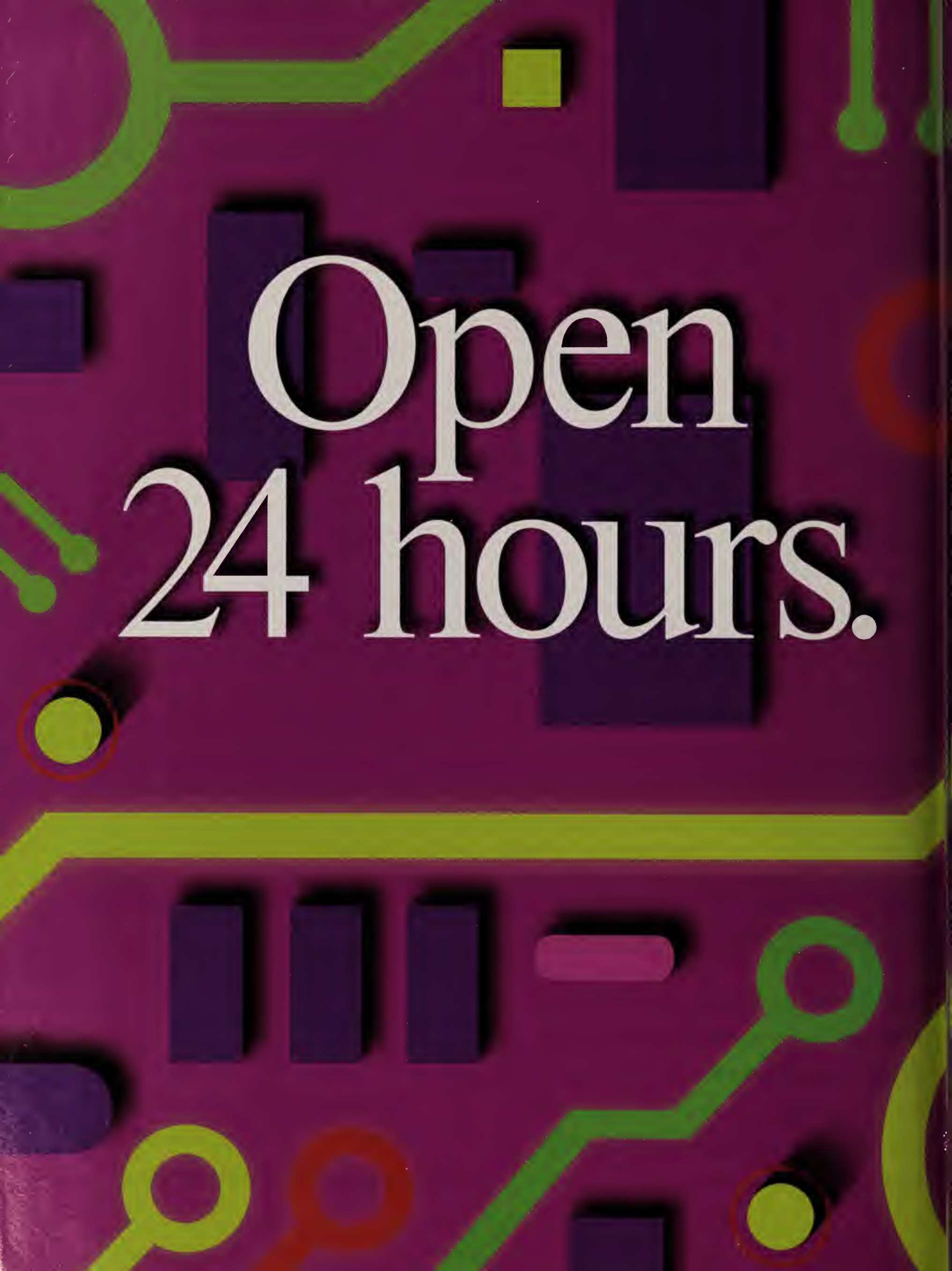
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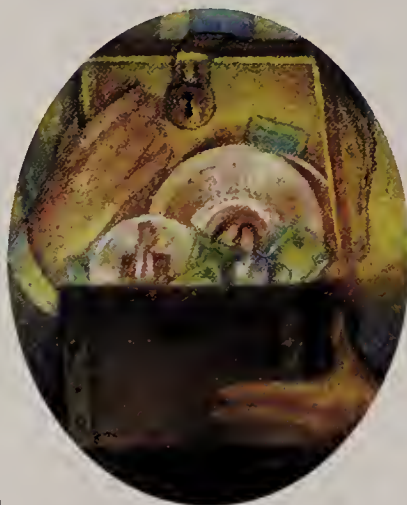
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If your interest in outsourcing has been piqued by our Outsourcing Buyers Guide, visit our **Resource Center**. You'll find past CIO outsourcing stories, a chart rating the major outsourcing vendors and links to outsourcing analysts, consultants and resources.

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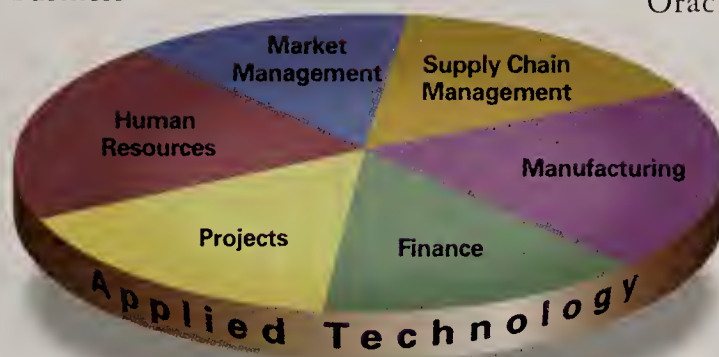
Alex Gray, Vice President of Corporate Operations

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In Box

LETTER FROM THE EDITOR, READER FEEDBACK AND HOW TO REACH US

Remember when people thought outsourcing was about saving money—that the only reason to entrust your IT activities to someone else was because large outsourcers could do things less expensively? Well, that hasn't exactly played out the way it was written. How much money do you think DuPont is "saving" in its \$4 billion deal with Computer Sciences Corp. and Andersen Consulting?



The other side of the coin was that you should never, ever outsource anything that was strategic to your business. Guess what?

The real reason companies outsource is to gain skills, technologies or other competencies they do not already have or that they can't afford to develop (see "Take-Out Value," Page 70). Sometimes that includes new competencies that could be very strategic indeed. And sometimes it's damn near impossible to get beyond your entrenched capabilities without going outside—especially when there's need for speed.

That doesn't mean outsourcing a system or an activity that is close to the heart of your business isn't a risky thing to do—it is.

But in the current environment, if there's a choice between getting it done well and quickly and doing it yourself with glitches and delays, the choice is easy. Just remember which competencies you ultimately do want to own and make sure you have a plan to bring them back in as soon as possible.

Thinking about outsourcing in those terms is a very different proposition and requires a rather more complicated set of questions than those we were asking five years ago. That's why Staff Writer Tom Field put together an outsourcing buyers guide (please see "Caveat Emptor," beginning on Page 46). He has included a classification of the top 50 players (along with ratings from a few industry watchers), but the main focus of his article is the process you should follow to make the best decisions, no matter what your specific outsourcing needs.

DuPont, with its 10-year, \$4 billion deal, has taken outsourcing to the max. In fact, Cinda Hallman, vice president and CIO of the Wilmington, Del.-based company, even decided to outsource the outsourcing process. She retained a consultant to solicit requests for information and proposals from possible candidates and to conduct the interviews and check references. "We would have been inventing a process if we'd done it in-house, and we didn't need to do that," Hallman says.

Where do you stand with outsourcing? Is there anything you wouldn't put out to contract? Let us know—you can reach us at letters@cio.com.

Allie Lundberg
lundberg@cio.com

FROM OUR READERS

SOME HAVE IT; SOME DON'T
Tom Davenport's Jan. 15, 1997, article, "The Skills That Thrill," regarding skills inventories reminded me of an experience I had a few years ago while I was managing a group of software folks. Some members of the group were more desirable than others; they were the ones you asked questions of and brought problems to. They didn't have skills that were missing in the others; they just were able to put their skills to use more effectively.

The question was, "Why?" What made them different? And more to the point of my dilemma as the group manager, how did I reward the person for that X factor that made him different so as to encourage it and how did I promote and propagate the X factor through the rest of the group? I never did find an answer; it was too subjective. Even when my company changed to a

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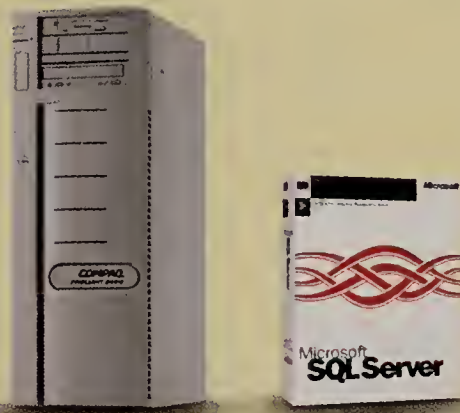
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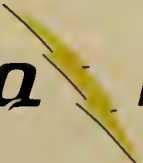


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For complete benchmark data, visit our web sites: www.compaq.com and www.microsoft.com

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In Box

fairly detailed inventory of desirable skills and attitudes, there wasn't any way for me to identify or categorize what made these people unique. Eventually I stopped trying and was just glad they were there.

I think you can and should categorize generally what traits and skills you want for a position, but I doubt strongly that getting to the point of having "20 to 60 competencies" will help you find the people with the X factor or even evaluate the people who do. The most that reliance on the competencies list will do is help you weed out the ones who don't have them.

Bill Reith

*Electronic Data Systems Inc.
Plano, Texas
breith@mail.microserve.net*

INFORMATION SOURCE

Your magazine is my top choice for information issues. I put you in the same must-read category as *Harvard Business Review* and *The Wall Street Journal*. Keep up the good work.

James Kindred

*Director of IS
Cascade Corp.
Portland, Ore.
jkindred@cascorp.com*

DEGREES AT A DISTANCE

I enjoyed reading "Getting a Degree@university.edu" [Trendlines, Jan. 15, 1997], but you missed one of the premier distance education programs in the United States. The National Technological University (www.ntu.edu), which was



founded in 1984, has awarded 1,000 master of science degrees in engineering and management to full-time working adults. NTU offers an MS in computer science and software engineering and Northeastern University's MS in information systems. In addition, NTU regularly broadcasts, via satellite television, noncredit continuing education courses in all aspects of computing-related business.

Gearold R. Johnson

*Academic Vice President
National Technological University
gerryj@mail.ntu.edu*

BALANCING ACT

I appreciate your suggestion to try to achieve some balance between work and home [In Box, Jan. 15, 1997]. I have, for some time, struggled with the often competing needs, wishes, demands and expectations of family (a wife and two children under 10), professional development (even just keeping up on the reading, much less anything else), continuing education (I want to get my doctorate) and community service. I sincerely think this is a major and significant issue for a fair percentage of CIO and aspiring CIO types. Just how do you juggle and balance it all?

That might be a very interesting topic to cover in *CIO* magazine. In my totally unscientific review of literature and watching for relevant material, I really haven't seen much beyond the typical time-management and priority-setting methodologies. To me, it is a much more complex situation.

Thanks for touching on it.

Steve Stelter

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Information Exhaust

Companies of the information age have become increasingly sophisticated in their uses of information. Some are gathering their customers' transactional data and selling it as a product. This article will look at the value of that highly marketable good.

BUSINESS ON THE INTERNET

WebMaster Magazine

CIO's sister publication explores the business-to-business issues of the Web and reports from the front lines of Internet business application. View the online version or subscribe at www.web-master.com. For more information, call 800 788-4605.

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I N S I D E

CONFERENCE OVERVIEW

Lynda Rosenthal, Lew McCreary,
and Joseph L. Levy

AYE, THERE'S THE NET

Since Internet and intranet applications typically serve different purposes and audiences, organizations need to develop separate strategies for building and maintaining external and internal Webs.

AGENDA

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A Tale of Two Webs: Making Your Intranet and the Internet Pay Off



The second *WebMaster Perspectives*SM conference, *A Tale of Two Webs: Making Your Intranet and the Internet Pay Off*, May 18-21, at the Doral Golf Resort & Spa in Miami, Florida, will investigate the rich potential of the Web as a business medium through the development of two essentially different communications networks.

A Tale of Two Webs will feature many of the industry's leading visionaries. The keynote presentation will feature Nicholas Negroponte, founder and director, Media Laboratory, *Massachusetts Institute of Technology*. The conference will be moderated by Geoffrey Moore, author of *Crossing the Chasm* and *Inside the Tornado*, and a respected authority on shifts in marketing strategy and teachings on tactics for succeeding in each stage of the Technology Adoption Life Cycle.

Lew McCreary, publisher and editor in chief, *WebMaster Magazine*, will moderate "Knowledge Management Meets the Web," a roundtable discussion featuring Mary Holland, manager/technical library, *National Semiconductor*, Chuck Lucier, chief knowledge officer and senior vice president, *Booz • Allen & Hamilton* and Larry Prusak, worldwide competency in knowledge management leader, *IBM Consulting*.

Other experts include David Osborne, author of *Banishing Bureaucracy* and *Reinventing Government: Five Steps to Banishing Bureaucracy*, Lori Fena, executive director, *The Electronic Frontier Foundation*, Linda G. Brigman, webmaster, *Research Triangle Institute*, Shel Holtz, president, *Holtz Technology + Communication*, Tim Horgan, former webmaster, *Digital Equipment Corporation*, and current webmaster, *CIO Communications, Inc.*, Jim Radford, webmaster and manager of Interactive Marketing, *3M Corporation*, and Dr. Ruth Westheimer, the world's most noted sex therapist.

During the conference our Corporate Hosts, a select group of leading innovative companies, will display a wide variety of technologies and services that address strategic operational IT solutions.

To enroll, please visit our Web site at www.web-master.com and complete the online enrollment form. You may also complete the enrollment form on the back cover of this brochure and fax it to 508 879-7720, or simply call us at 800 355-0246. We look forward to seeing you in Miami!

Regards,

Lynda Rosenthal
Senior Vice President
and General Manager
Executive Programs

Lew McCreary
Publisher and
Editor in Chief
WebMaster Magazine

Joseph L. Levy
Group Publisher and
President
CIO Communications, Inc.

Aye, There's the Net

With the 21st Century just around the corner, millennium watchers are knocking each other over trying to put the most accurate spin on the future. But the future — or at least its most important underpinning — is already here. The world as we knew it has changed irrevocably, thanks to information technology in general and the Internet in particular. According to **Nicholas Negroponte**, director of the Media Lab at MIT and author of *Being Digital*, bits instead of atoms are increasingly forming the basis of human interaction. "As we interconnect ourselves," writes Negroponte, "many of the values of a nationstate will give way to those of both larger and smaller electronic communities."

For businesses, the electronic community concept coupled with the shift from atoms to bits translates into a whole new way of recognizing and evaluating assets. Knowledge and information — rather than physical assets such as inventoried goods, buildings and computers — are fast becoming the most valuable corporate assets. Just how valuable is information? A desktop computer was recently stolen from the offices of a credit card company. While the machine was worth a few thousand dollars, company officials estimated that replacing the credit account information on that machine could cost upwards of \$6 million. Now that's intellectual capital!



The main driver propelling intellectual assets into the forefront is that remarkably robust network of computers that is revolutionizing commerce and communications.

Executives need to realize that Internet and intranet applications are critical development efforts that merit serious attention now.

Thousands of companies are already using the Internet's friendly graphical interface known as the World Wide Web to revolutionize the way they do business.

The Bank of America, for example, has built a full-service financial institution on the Internet that lets consumers apply for

loans, pay bills, transfer funds and create "what-if" scenarios for home buying and other major purchases. As a large company serving numerous markets, the bank will continue to devote resources to Internet development. "We see no limit to the types of services we can offer and support over the Internet," says **Karen Shapiro**, webmaster of the Interactive Banking Division.

Other organizations have used internal Web-based intranets to streamline processes, share information and leverage knowledge. Intranets facilitate knowledge management by enabling researchers to conveniently review reports in real time. As with any new technology, it will be some time before organizations develop new business models and realize additional revenue streams. Yet executives who want to take advantage of the Web's potential must develop strategies now. And the best way to do that is to leverage the Web's unique ability to both reach out to customers externally and facilitate knowledge sharing among employees internally. Executives need to realize that Internet and intranet applications are critical development efforts that merit serious attention now.

Many organizations have already heard this message loud and clear. Take the case of public sector agencies in the United States. According to **David Osborne**, an expert on reinventing government, founder of the Public Strategies

Group and author of *Banishing Bureaucracy*, all sorts of public sector organizations at the federal, state and local levels are dramatically changing how they operate and deliver services. "In my view," says Osborne, "the driving force behind government redesign and reinvention is technology." And more often than not, that technology is in the form of Web-based applications aimed at providing constituents with more information, streamlining internal processes, or both. In Massachusetts, Internet technology helps take some of the legwork out of finding a job. Residents can visit the MassJobs Council's One-Stop Career Centers and search a Web-based database that lists available jobs and the training required to land them. The Internet also figures prominently at the federal level of government. The General Services Administration (GSA) lets its customers search product databases and purchase supplies through GSA Advantage, a Web-based ordering service that tackles that long-time Achilles heel of government agencies, paperwork. In these and dozens of other examples, the public sector is using the Internet to become a lot more customer-friendly; but that's not the only payoff. "Technology has also made traditional linear, sequential work processes obsolete, enabling a shift to teamwork and networked processes," says Osborne. For example, agencies routinely use both Internet and intranet-based services to share information and spread the word about government process redesign. One case in point is an online database sponsored by the Alliance for Redesigning Government that serves as a clearing house for case studies, bibliographies and other documents of interest to reform-minded citizens and public sector employees.

Since Internet and intranet applications typically serve different purposes and audiences, organizations need to develop separate strategies for building and maintaining external and internal Webs. For business, this requires a familiarity with Web products, systems and protocols,

according to **Geoffrey Moore**, founder of the Chasm Group and author of *Crossing the Chasm* and *Inside the Tornado*. Once executives acquire a basic technical knowledge, "it will take real business process reengineering imagination," Moore says, in order for businesses to develop effective Web-based applications. "The big challenge these days is no longer to cut costs so much as it is to grow revenues," he adds. "And that is where the imagination will be most valuable." Then there are the all important human resource issues. Bringing together the right personnel —

"The single most important issue for any Web site is taking the time to step back from your vision of yourself as a company or a department, and seeing the site as your visitors do."

with the right mix of skills — is critical. Unfortunately, it's also one of the most difficult aspects of any Web project.

"It's just not always possible in the real world to have two staffs working on your Internet and intranet projects," says **Linda G. Brigman**, webmaster of Research Triangle Institute, a non-profit research organization that offers Web-based information services to numerous clients. "Finding the right staff that can effectively work on both projects is one of the major challenges," she adds. If your organization can't allocate separate Internet/intranet projects (and most can't) there are ways to manage ably with the resources that are available. According to Brigman, the most essential ingredient to any Web staff is the ability to communicate effectively, followed closely by a love of learning and an understanding of basic business issues. "You need a core staff that is proficient in multiple areas," she says. While graphic design, coding and server administration are skills that transfer easily

between different sites, assembling the right marketing personnel can prove tricky. Keep in mind, says Brigman, that "marketing to prospective clients internally is an entirely different animal from marketing to your employees and current business partners."

While assembling an effective Web team is the foremost hurdle, it's not the only one. As more organizations get sold on the Internet's premise and link up via networks, new issues regarding security, intellectual property, liability, privacy and governance arise. "Along with the benefits of the Internet, companies really have to weigh the risks and liabilities upfront," says **Lori Fena**, executive director of the Electronic Frontier Foundation. For example, while increased access to information is one of the Web's biggest selling points, sites are rarely designed with the visually- or hearing-impaired in mind. As a result, Fena thinks some companies run the risk of alienating current and potential customers. Another possible pitfall is information ownership and responsibility. "Companies need to determine who controls the information on the Internet," she says. And when it comes to the intranet, "how do you encourage positive uses of it?"

The best approach to developing Web sites, is putting yourself in your audience's shoes. "The single most important issue for any Web site is taking the time to step back from your vision of yourself as a company or a department, and seeing the site as your visitors do," Brigman asserts. Despite the rough terrain, executives shouldn't let such issues discourage them from setting out on an Internet course. While the challenges are many, the benefits to creating effective Internet/intranet strategies are limited only by ingenuity and innovation. "We can't know exactly where this all going," says Brigman. "But we must study the trends and be thinking about how they will affect our future plans."

Megan Santosus is associate editor for Web in print at CIO Magazine and can be reached at santosus@cio.com.

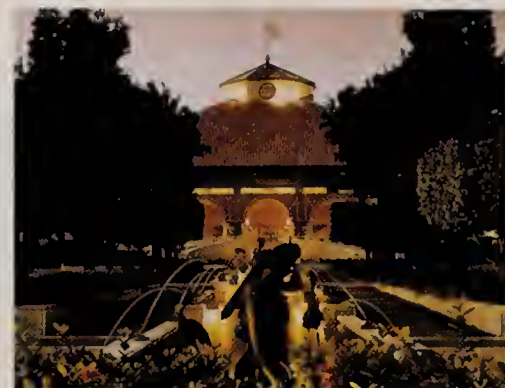
LIFE IN THE DIGITAL AGE

"Over time, there will be more and more people on Internet with the time and wisdom for it to become a web of human knowledge and assistance." So predicts **Nicholas Negroponte** in his book, *Being Digital*. While Negroponte does see a danger in the world dividing into the information haves and have-nots, he nevertheless voices optimism about the digital future. In his book, Negroponte identifies the following beneficial attributes of life in a digital age:

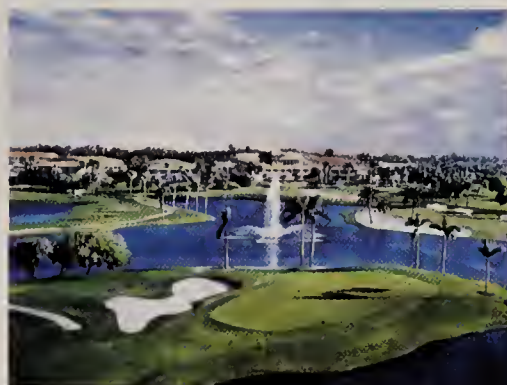
- **DECENTRALIZING:** Networks of decentralized and inexpensive yet powerful personal computers will enable people to work on activities that require serious number-crunching and problem-solving capabilities.
- **GLOBALIZING:** With technology, geography and proximity become irrelevant for forming friendships, partnerships and collaborations among people and corporations.
- **HARMONIZING:** The collaborative impact of technology will lead companies and even countries into cooperative relationships rather than competitive ones.
- **EMPOWERING:** Technology facilitates mobility, access and ultimately, the ability to bring about change. "As the business world globalizes and the Internet grows," predicts Negroponte, "we will start to see a seamless digital workplace." Start preparing your workplace for the digital future today.

THE DORAL GOLF RESORT & SPA

In the grand tradition, the Doral Golf Resort & Spa offers championship golf, spectacular cuisine, luxurious accommodations, a world class spa, a variety of recreational activities and extensive conference facilities in a superb tropical climate.



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Each of the resort's 600 spacious guest rooms and 94 suites have been made ready for you through the lavish attentions of a \$30 million dollar renovation.

COMPANION PROGRAM AGENDA

SUNDAY, MAY 18

2 p.m.-6 p.m.	Conference Registration
7 p.m.-9 p.m.	Networking Reception and Registration
9 p.m.-midnight	Networking/Hospitality

MONDAY, MAY 19

8:30 a.m.-9:30 a.m.	Stretch and Tone Class
9:30 a.m.-10:30 a.m.	Companion Breakfast
Noon-1:15 p.m.	Luncheon with conference participants
1:15 p.m.-4 p.m.	Golf Clinic or Tennis Clinic
5 p.m.-6:30 p.m.	Reception
6:30 p.m.-midnight	Networking/Hospitality

TUESDAY, MAY 20

7 a.m.-8 a.m.	Breakfast with conference participants
10 a.m.-10:30 a.m.	Coffee Break
Noon-1 p.m.	Luncheon with conference participants
3:15 p.m.-3:30 p.m.	Coffee Break
3:30 p.m.-5:30 p.m.	Keynote session with Nicholas Negroponte
5:30 p.m.-6:30 p.m.	Reception with Nicholas Negroponte
6:30 p.m.-midnight	Networking/Hospitality

WEDNESDAY, MAY 21

7 a.m.-8 a.m.	Breakfast with conference participants
10:15 a.m.-10:45 a.m.	Coffee Break



T O E N R O L L V I S I T O U R W E B S I T E A T

**DORAL GOLF
RESORT & SPA**
MIAMI, FLORIDA
MAY 18-21, 1997

WebMaster PerspectivesSM

A Tale of Two Webs:

Making Your Intranet and the Internet Pay Off

**SUNDAY,
MAY 18**

2 p.m.-6 p.m.
Conference Registration

7 p.m.-9 p.m.
Networking Reception and Registration

9 p.m.-midnight
Networking/Hospitality

**MONDAY,
MAY 19**

7 a.m.-8 a.m.
Breakfast

8 a.m.-8:15 a.m.
Welcome and Opening Remarks
JOSEPH L. LEVY
Group Publisher and President
CIO Communications, Inc.



Joseph L. Levy

LEW McCREARY
Publisher and Editor in Chief
WebMaster Magazine



Lew McCreary

8:15 a.m.-9:15 a.m.
Life Cycles on the Internet
DR. GEOFFREY MOORE
Chairman
The Chasm Group
Author
Crossing the Chasm
Inside the Tornado
Moderator



**Dr. Geoffrey
Moore**

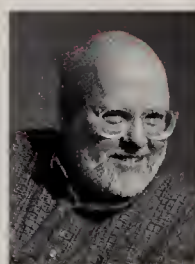
High-tech vendors in the 1990's have learned a host of new lessons about how to adapt their marketing and management strategies to the changing dynamics of the life cycle. Now it is time for executives to steal a page or two from these vendors in learning to help meet the challenges of the two Webs. We need to understand the new technology adoption life cycles created by the Internet and the Web in both the marketplace at large and inside each organization that adopts them.



This author's most recent book will be distributed at the conference.

**MONDAY
CON'T**

9:15 a.m.-10:15 a.m.
State of the Webmaster
TIM HORGAN
Webmaster
CIO Communications, Inc.



Tim Horgan

Both the public and private sectors are struggling with the roles, responsibilities, purposes and interrelationships of the webmaster. The role has sprung up like steam after an afternoon rain, and is just as elusive. Horgan will share insights from *WebMaster's* online forums, in which industry experts and webmasters alike explore the challenges and problems of their work and what is happening with this new position.

10:15 a.m.-10:45 a.m.
Coffee Break

10:45 a.m.-noon
**Reinventing Government Online:
How Public Institutions Are Banishing
Bureaucracy and Delighting Their
Customers**

DAVID OSBORNE
Founder
Public Strategies Group
Author
Banishing Bureaucracy
*Reinventing Government: Five Steps to
Banishing Bureaucracy*



David Osborne

The federal government has created dozens of Web sites to give citizens better access to government services. The U.S. Department of Labor's America's Job Bank and Massachusetts' new One-Stop Career Center use free intranet and Internet access to transform business processes. Osborne will discuss how public institutions — from school districts to federal agencies — are using intranets and the Internet to reinvent themselves and reach their customers. Osborne will explore the role of technology in transforming these institutions from the bureaucratic model of the industrial era to a more entrepreneurial model appropriate to the information age.

MONDAY CON'T



Charles Kirk

Noon-1:15 p.m.
Luncheon

1:15p.m.-2:15 p.m.
**Interactive Commerce and Channel
Mastery: What It takes to Win**

CHARLES KIRK

Former Senior Vice President of Service
and Logistics

Fruit of the Loom

CIO, Customer Experience
General Motors

The Internet presents exciting possibilities to strengthen existing distribution chains or to reinvent approaches to your market channels. With real interactive commerce, innovative and progressive channel strategies can become reality. Fruit of the Loom's award-winning "Activewear Online" was one of the first applications attempting channel mastery on the Web. This session will outline the tools, tricks and tactics that it took to implement Activewear Online, and the business benefits resulting from this system.

2:15 p.m.-2:45 p.m.
Coffee Break

2:45 p.m.-3:45 p.m.
Concurrent Sessions

4 p.m.-5 p.m.
Concurrent Sessions — Repeated

5 p.m.-6:30 p.m.
Reception

6:30 p.m.-midnight
Networking/Hospitality

TUESDAY, MAY 20



Dr. Ruth
Westheimer

7 a.m.-8 a.m.
Breakfast

8 a.m.-9 a.m.
**Is Web Sex Safe?:
Sex and the Internet**
DR. RUTH WESTHEIMER



"When it comes to disseminating information about sex I say great; when it comes to other forms of what's been dubbed 'cybersex,' I say maybe," says world-famous sex therapist and

TUESDAY CON'T



Karen Shapiro

author, Dr. Ruth Westheimer as she explores online sex. In this session, Dr. Ruth will discuss the issues facing individuals and corporate management caused by the boom of Web access. And yes, Dr. Ruth conducts business on the Web. The Encyclopedia for Sex is available online. Join us for this entertaining and educational session on sex and the Internet.

9 a.m.-10 a.m.

Can You Bank on the Internet? You Bet!

KAREN SHAPIRO

Webmaster

Interactive Banking Division

Bank of America

What does it take to build a bank on the Internet? Bank of America was a pioneer, bringing up the first bank Web site in September 1994. Today, the bank's customers are using the Internet to pay bills, transfer funds and check their balances. This session will explore some of the strategic decisions the bank made in developing its Web presence and how it is working today to build this new channel.

10 a.m.-10:30 a.m.

Coffee Break

10:30 a.m.-11:15 a.m.
**Create Maximum Efficiency:
Staffing Your Web Sites**

LINDA G. BRIGMAN

Webmaster

Research Triangle Institute

Finding the right staff to effectively work on both Internet and intranet initiatives is a major challenge. As skills do not always overlap between the 'nets, a core staff with excellent communications abilities and proficiency in multiple areas is necessary. Graphic design, organization, coding and server administration are much the same regardless of the province, but content, promotion, strategic planning and implementation vary greatly between an Internet and intranet projects. Find out what one webmaster has found while looking for these talents.



Linda
G. Brigman



T O E N R O L L V I S I T O U R W E B S I T E A T

TUESDAY CON'T



Jim Radford

11:15 a.m.-noon **Building an Electronic Market Channel That Leads to Customer Loyalty**

JIM RADFORD

Webmaster and Manager
Interactive Customer Communications
3M Corporation

Radford will discuss the key ingredients of 3M's emerging digital enterprise. He will trace the company's recent initiatives for developing a knowledge-based enterprise through customer-support data, a global infrastructure, network publishing platforms and one-to-one marketing techniques for its 60,000 diversified products.

Noon-1 p.m.
Luncheon

1 p.m.-2 p.m.
Concurrent Sessions

2:15 p.m.-3:15 p.m.
Concurrent Sessions – Repeated

3:15 p.m.-3:30 p.m.
Coffee Break

3:30 p.m.-5:30 p.m. **Wearing the Web Well**

NICHOLAS NEGROPONTE

Founder and Director
Media Laboratory
Massachusetts Institute of Technology
Author
Being Digital



Nicholas
Negroponte

Proudly Presented by:



On the Richter scale of change, the Web is a 10.5. And if you think this is limited to business, education and entertainment, brace yourself. You will be wearing the Web soon and eating it shortly afterwards. Like the stock market, attitudes about the Web change constantly. For the first time, hype is accompanied by understatement. In the year 2000, over a billion people will use the Net, representing trillions of dollars in electronic business.

TUESDAY CON'T

5:30 p.m.-6:30 p.m.
Reception with Nicholas Negroponte

6:30 p.m.-midnight
Networking/Hospitality

WEDNESDAY, MAY 21



Lori Fena

7 a.m.-8 a.m.
Breakfast

8 a.m.-9 a.m.
First, Do No Harm

LORI FENA
Executive Director
Electronic Frontier Foundation

The vast web of electronic media that connects us is heralding an unprecedented new age of communications and commerce. New digital networks offer a tremendous potential to empower individuals in a world of dynamic possibilities. However, uncertainties about these communications networks have become the subject of significant debate concerning privacy and the security of personal and corporate information online. Balancing business ventures with responsibility to consumers is necessary to foster commercial growth of the World Wide Web. We must address these issues with clarity, responsibility, and an informed, well-developed vision of the electronic world in which we want to live. We can be certain that the legislative decisions made today will greatly affect future development of electronic communications for decades to come.



Lew McCreary

9 a.m.-10:15 a.m.
**Panel: Knowledge Management
Meets the Web**

Moderator:

LEW MCCREARY
Publisher and Editor in Chief
WebMaster Magazine

Panelists:

MARY HOLLAND
Manager/Technical Library
National Semiconductor Corporation

CHUCK LUCIER
Chief Knowledge Officer and
Senior Vice President
Booz • Allen & Hamilton, Inc.



Mary Holland



Chuck Lucier

WEDNESDAY CON'T



Larry Prusak

LARRY PRUSAK

Worldwide Competency in Knowledge
Management Leader
IBM Corporation

What is the ROI of better decision-making? One of the most pressing challenges businesses face is the need to get the right information into the right hands at the right time to do the enterprise the greatest possible good. If it's true that the best-informed people make the smartest business decisions, then an abundant flow of high-quality insight is the life's blood of an organization. Writ large, this is the discipline of knowledge management. How can the Web contribute to a process of highly effective decision support? What are the necessary pieces — and who are the necessary players — in creating a world-class enterprise knowledge network? *WebMaster* editor in chief Lew McCreary leads a panel of experts in looking at Web-enabled knowledge management.

10:15 a.m.-10:45 a.m.

Coffee Break

10:45 a.m.-11:45 a.m.

Influencing Behavior in Cyberspace

SHEL HOLTZ, ABC

Principal

Holtz Communication + Technology



Shel Holtz

As new and different a medium as the World Wide Web is, there is one trait it shares with all other media: Its objective is to communicate. But most of the emphasis on the Web is on design, technology, navigation and ease of use. Holtz tells how to make a Web site communicate. He will cover four models of communication that are undergoing dramatic change as a result of distributed computing; look at the three appropriate uses of technology for communication purposes; and examine effective uses of the World Wide Web and intranets for public relations, media relations, employee communication and crisis communication.

11:45 a.m.-noon

Conference Recap

CONCURRENT SESSIONS



**Bob
Beauchamp**

Managing Your Missing-Critical Applications on the Internet/Intranet

BOB BEAUCHAMP

Vice President

Business Strategy

BMC Software

As mission-critical applications are deployed across the Web, both from host-based and client-server environments, the need for tools to monitor and manage these applications across the Internet increases. So far, Internet/intranet solution providers have focused almost exclusively on tools that help users manage the content and usage information of their Web sites, ignoring such important issues as; knowing when your Web server is experiencing bottlenecks or has crashed, keeping your Web servers and applications running at peak performance and availability, where the problem lies and keeping the site up and running while doing maintenance. These and other key application and data management issues associated with traditional mission-critical environments will be discussed.

Reaching the Enterprise: Business Intelligence Via Intranets

CHRIS GREJTAK

Executive Vice President of Marketing

Brio Technology



Chris Grejtak

Corporate intranets can be effectively and easily used as the conduit for delivering valuable business information to thousands of users throughout your enterprise. Organizations can empower users to view standard reports, create new charts and reports and analyze data (OLAP), all within standard Web browsers. No client server connections, no team of report writers, no new application to learn — users are productive on their own, gaining insight from corporate data, in a very short period of time. This session will discuss an evolutionary Web-based information delivery architecture and its technology requirements. A panel of information technology managers will discuss how they have implemented and are experiencing the benefits of Web-enabled business intelligence.



T O E N R O L L V I S I T O U R W E B S I T E A T

CONCURRENT SESSIONS CON'T

How to Create Business Results with the Internet and Your Intranet

M. LEWIS TEMARES

Vice President for Information Technology
Dean of the College of Engineering
University of Miami

SCOTT TEMARES

Director of Knowledge Management Solutions
Cambridge Technology Partners

*Courtesy of Computer Associates
International, Inc.*

The World Wide Web is the fastest technological adoption in history, achieving 10 million users in only 10 months. Innovative competitors are changing the rules for how business is conducted, and established market leaders are quickly pressed to compete for market share using this new delivery methodology. This presentation will establish how companies can reinvent themselves for this new market and create tangible business results. Topics will include building a business case for Internet and intranet business solutions, critical success factors, pitfalls to avoid in Internet application development and case studies.



Tom Kehler

Measuring the Real ROI from Internet Sales Channels

TOM KEHLER

President and CEO
CONNECT, Inc.

Can a rational business model be used to assess the value of an Internet-enabled Virtual Sales Channel? What is the return on investment of business-to-business transactions of the Web? To help companies develop a business case for selling on the Net, software application provider CONNECT collaborated with Giga Information Group and CSC Consulting on an ROI study to analytically model the costs versus benefits of Internet selling channels. This session will describe the framework of the study, specific bottomline results for sellers and buyers, challenges of the distribution chain, channel strategies on the Web and case studies.



Mike Howard

Steps to a Full-Service Intranet

MIKE HOWARD

Vice President, Intranet Marketing
Digital Equipment Corporation

ROCK GRIFFIN

Practice Director
*Coopers and Lybrand -
Solutions Thru Technology*

Intranets are yielding remarkable paybacks by saving money and improving productivity. Full-service intranets offer the flexibility, capacity and services needed to support new applications. But with so many opportunities the challenge is to build a consistent strategy so projects support one another and the company's business. This session will focus on the steps required to build a full-service intranet. Content standards, network architecture and security decisions will ultimately determine whether an organization can operate a full-service intranet.



David Fowler

The Intranet that Jack Built: Picking the Right Infrastructure Puts Your Intranet on Solid Ground

DAVID B. FOWLER

Vice President
Sales and Marketing
Gradient Technologies, Inc.

Many of today's corporate intranets have a lot in common with the house that Jack built — starting out modest and simple and quickly growing out of control. Choosing the right intranet structure is critical, as many start out as an internal Web site posting static company information, but end up evolving into a mission-critical and content-critical resource. This session will explore the enterprise/enterprise network market and the new Web client/server paradigm, and will outline solutions using Web-based distributing computing technology as the ideal infrastructure on which to build today's intranets.

CONCURRENT SESSIONS CON'T



**Dr. Ira A.
Goldstein**

Picture Perfect:

A Focus on Internet Imagery

DR. IRA P. GOLDSTEIN
Chief Technology Officer
Computer Systems Organization
General Manager
Internet Technology Group
Internet Technology Officer
Hewlett-Packard Company

The Internet and World Wide Web have the potential to transmit and manage vast amounts of imagery created by a new generation of low-cost digital input devices. At the same time, low-cost photorealistic printers are entering the market, allowing Internet users to obtain high quality hardcopy. To make this new world of an image-rich Internet practical, the protocols on the Internet need to be extended to make effective the transmission of these images on connections of limited bandwidth, search engines need to be extended to retrieve across databases, and servers need to be refined to perform more efficiently when supplying large data objects. This session will explore how the proliferation of non-text media on the Internet will drive networking and computing architectures in the future.



John S. Lee

Eliminate the Webmaster Bottleneck By Enabling Distributed Web Site Production

JOHN S. LEE
Director of Business Development
Interwoven, Inc.

The value of Web sites is often measured by the quality and constant change of their content. Content creation is the domain of writers, artists, engineers and marketers, far from the sphere of direct control. Without coordination, this process is highly error prone, chaotic, time consuming, and inefficient. Corporate webmasters can maximize the ROI by creating an enabling environment integrated into the company's business process to structure the development and deployment process, automate the merging of content and resolution of conflicts, allowing more rapid, error free turnaround with any



**Steven L.
Telleen, PH. D**



Bart Meltzer

numbers of authors and authoring organizations. Case studies of successful Concurrent Website Production using Interwoven's client/server software will be presented.

Coordinating Your Intranet and the Internet – The Big Pay off!

STEVEN L. TELLEEN, PH.D.
Director of Strategy
Intranet Partners

BART MELTZER
Chief Technologist
Intranet Partners

A good Internet site requires production, just like a TV series. And, like a TV series, the Internet site does not stop after the first show. Intranets allows the writers, directors, artists and production crews that create the Internet web site to communicate and coordinate their activities, literally at the speed of light. Because the technology is the same, teams that use an intranet to communicate discover new ways to use the technology to better serve Internet customers. This happens both from a better understanding of how to apply the technology and from building cross-technology interfaces that can be opened to customers, directly from the Internet. This presentation is about winning web strategies and architectures to help you bridge the gap between your web site(s) and back office(s), discover new innovative on-line services and improve dialogue with internal and external customers.



**Randall
Howard**

Where's Your Integrity?

RANDALL HOWARD
Chairman and CEO
MKS

By the end of 1997, ninety percent of Fortune 500 companies will have a corporate Internet site, and employees will be actively using this electronic platform to collaboratively develop and store critical business information. CIOs, however, are left with the dilemma of managing the integrity of corporate Web. Client/server environments were tough enough to control. Now every employee with a browser



T O E N R O L L V I S I T O U R W E B S I T E A T

CONCURRENT SESSIONS CON'T

can alter, delete or add to the corporate information backbone. This presentation will explore the issue of Web integrity and present some solutions to the problem, underscoring the critical need for an intranet Web object management system.

Taming the Internet Beast

KATHY McCABE

Vice President of Development/Editorial
Director

Red Flash Internet

Courtesy of PLATINUM Technology

Conducting business over the Internet can be daunting enough without worrying about security of transmitted information. Internet applications need to be scaleable, robust and flexible to handle multiple party transactions securely and reliably in real time. This case study will focus on business strategies Red Flash Internet uses to leverage opportunities on the Net. Methodologies concerning web design standards; security considerations such as encryption, architectural designs for gateway servers, and system reliability will be discussed.



**Jennifer
Bergantino**

Letting the Customer Drive: How Internet Transaction Processing Will Change Your Business

JENNIFER BERGANTINO

Vice President of Marketing and
Strategic Planning

Progress Software Corporation

The key to success in customer service-intensive businesses is to let the customer drive. Giving customers the option to directly access your company's internal databases — letting them serve themselves via Internet or extranet — ensures that they get quick, efficient service. Technology solutions are available which allow companies to open up their databases to the Internet securely and easily. Companies can realize substantial cost savings while simultaneously improving customer service and forging stronger ties with customers. In this session, attendees will learn how to adapt their business practices to their customer's wants and needs in order to provide them with a truly customer-driven experience.



Kai-Fu Lee

Toward the Second Web

KAI-FU LEE

Vice President & General Manager
Web Products Division
Silicon Graphics, Inc.

Will the Web continue to grow, reaching billions of people in the next decade? At Silicon Graphics, we are firm believers in this growth; however, the Web must evolve to what we call the "Second Web," a Web that reflects the real world. The Second Web is a three dimensional, multimedia Web where users can shop, collaborate, work, meet people, and play games, just like in the real world. This talk will describe why the Second Web is inevitable, how it would evolve, and what challenges are ahead.



**Paula George
Tompkins**

Internet Applications:

A New Way of Computing

PAULA GEORGE TOMPKINS

CEO and Founder
SoftAd

Having rolled out Internet foundations, many companies are wondering: where is the bang for my buck? Online access to the company directory is convenient, but what about the enterprise-class applications that leverage the much touted potential of the universal network? In 1997, the most forward-thinking and aggressive companies will develop and implement robust Internet information applications. Because deployment costs are reduced within an Internet framework, 1997 will see unprecedented numbers of users connected to the same applications. Applications that can mine data and package it according to the profile of the user will be extraordinarily successful. IT managers will realize reduced costs of deployment and maintenance while Sales and Marketing executives enjoy increased revenues through tightened customer relationships.



**Peter
Kestenbaum**

**So It's Time to Build Your First
Java-Based Site**

PETER KESTENBAUM

Director for North American Field Marketing
Sun Microsystems, Inc.

There is no doubt that JAVA Computing is quickly gaining ground in the corporate IS environment. Sun Microsystems, the inventor of JAVA and key supplier of JAVA technology will host a session targeted at understanding where the technology is and what the status of the various development tools are. The goal of this session is to explore the status of JAVA tools and share expectations gained in putting up JAVA production sites. Kestenbaum, host of this session, has been an integral part of the JAVA phenomena since its inception.

**A Concurrent Session will also
be presented by:**

Sybase, Inc./Powersoft Corporation

NETWORK SECURITY WORKSHOP



Sun Microsystems Inc., the leader in large Internet networks, will be conducting a Network Security Workshop at the Doral Resort following the WebMaster Conference on Wednesday afternoon, May 21, 1997. The workshop will include lunch, with a discussion on public policy issues, followed by a set of highly interactive and impactful presentations and discussions on network security.

This Network Security Workshop will feature sessions on:

- Recommended policies and procedures for corporate webmasters.
- Discussion on the state of security technology, such as firewalls and encryption.
- Development trade-offs such as Java/JavaBeans/Active X for different types of applications.
- Assessing security risks and audits within your environment.

Please plan on extending your stay at the Doral for one more afternoon. You will come away with information and ideas to help you deal with security issues within your business environment.

The cost of this workshop is \$85.00. To register, please be sure to check the box on the enrollment form on the back page of this brochure. The workshop will conclude by 5p.m.



For more than 16 years, **BMC Software, Inc.** has been a leading worldwide developer and vendor of products for the application and data management needs of host-based and open systems computing environments. BMC Software is working closely with complementary vendors to deliver integrated management solutions across the enterprise and across the Internet. Headquartered in Houston, Texas, BMC Software is the world's 11th largest independent software company, offering more than 140 products for heterogeneous computing environments.



Brio Technology is the leading provider of desktop OLAP solutions for the data warehouse. Brio's complete product family, comprised of **BrioQuery Enterprise**, **brio.query.server**, **brio.insight**, and **brio.quickview**, provides a balanced, comprehensive solution which safely and affordably delivers data warehouse information in both client/server and intranet environments. Brio's innovations include the first graphical drag-and-drop query tool and, in 1996, the first interactive desktop OLAP within the web browser window.



Computer Associates International, Inc. (NYSE: CA), with headquarters in Islandia, NY, is the world leader in mission-critical business software. The company develops, licenses and supports more than 500 integrated products that include enterprise computing and information management, application development, manufacturing and financial applications. CA has 9,000 people in 130 offices in 40 countries and had revenue of more than \$3.5 billion in fiscal year 1996. CA can be reached by visiting www.cai.com on the World Wide Web, e-mailing info@cai.com or calling 516 342-5224.

C O R P O R A T E H O S T S

CONNECT®

Connect, Inc. is the leading provider of Internet-based interactive commerce and order management applications for companies that want to leverage the Internet as a new sales channel. The company develops market-leading interactive commerce applications including OneServer™ and OneServer OrderStream™. OneServer is the industry's most robust, open and scalable applications platform for high-end interactive commerce. OneServer OrderStream is the first Internet-based order management application to create a Virtual Sales Channel™ for business-to-business transactions.

digital

Digital Equipment Corporation is the world leader in implementing and supporting networked platforms and applications in multivendor environments. Building on its core competencies in software, systems, networks and services, DIGITAL — working with its business partners — provides a complete range of information processing solutions from personal computers to integrated worldwide networks. DIGITAL's products and services for open client/server computing are helping customers simplify business practices and enhance organizational productivity. The company does business in more than 100 countries and develops and manufactures products in the Americas, Europe and Asia/Pacific.

GRADIENT

Gradient Technologies, Inc. is a leading provider of open distributed computing software and services for securing the enterprise and emerging intranet markets. Gradient's WebCrusader products provide a high degree of security, redundancy and reliability for companies building mission critical client/server and Web-based applications. Gradient provides products and services to many Global 2000 organizations, governments and universities from around the world, independent software vendors and system vendors such as IBM, Hewlett-Packard, Netscape, Hitachi, NCR, Microsoft, Oracle, Apple, Sequent and Siemens Nixdorf. Gradient is privately held and located in Marlborough, Mass.



Hewlett-Packard Company is a leading global manufacturer of computing, communications and measurement products and services recognized for excellence in quality and support. HP is the second-largest computer supplier in the United States, with revenue in excess of \$38 billion in its 1996 fiscal year and 112,000 employees worldwide. HP has a strong history of leadership in open systems and in the development of standards-based products. This standards-based strategy enables customers to select the best available computer products from HP and other vendors and link them into open, cooperative networks that make information easier to acquire, share, manage and use.



Interwoven, Inc. develops enterprise client/server solutions for Concurrent Web site Production. Our software enables webmasters, producers or editors to distribute Web site content creation across numerous teams and individuals. It facilitates the maintenance of an organized, structured production process. The result is improvement in productivity, quality, communication, time to market and workflow. By supporting and automating the web production process, Interwoven's software solution allows enterprises to more effectively conform their Web activities to their business model.



Intranet Partners (IP) is the leading full-service consulting and professional services provider of intranet strategies and solutions for corporations. Intranet Partners develops and architects intranet strategies and delivers customized Intranets based on open-standards — economically, rapidly and securely. IP is a product independent consulting team composed of Internet pioneers who have designed and implemented numerous successful intranets. IP customized solutions conform to each client's business culture and processes. IP specializes in providing intranet advice, assessment, design, implementation, management and education tailored to each client. Please visit www.ip.com for detailed information on Intranet Partners.



Mortice Kern Systems Inc. (MKS) is a leader in software configuration management (SCM) and Web object management (WOM) solutions for Internet/Intranet and client/server platforms with more than 450,000 users worldwide. The company offers a family of MKS Integrity products, services and training to help users maximize productivity and better manage the software development process across multiple platforms. MKS strategic and technology partners include Netscape Communications Corporation and Informix Software among others. Visit www.mks.com for more information about MKS.



PLATINUM Technology, Inc., one of the top 20 software vendors worldwide, helps businesses manage and improve their software operations. PLATINUM partners with CIOs to help reduce IT expenses, speed and streamline system automation, and manage data better, faster. The company offers a turnkey solution for its customers' IT problems, including software products, consulting services, and IT training and implementation services.

C O R P O R A T E H O S T S



Progress Software Corporation (NASDAQ: PRGS), headquartered in Bedford, Mass., is a leading supplier of application development and deployment software which it markets to business, government and industry worldwide. The company's new WebSpeed™ product enables the rapid development and deployment of robust business applications so that customers, partners and vendors can access corporate databases to conduct Internet- or intranet-based business transactions. Visit www.progress.com for more information about Progress Software products and services.



Silicon Graphics is the leading supplier of high-performance visual computing systems. The company has defined new classes of visual computing and transformed them into practical, cost-effective solutions. The company, founded in 1982, employs approximately 7,200 people in 65 domestic and 65 international locations. Silicon Graphics is recognized as the third-largest workstation vendor and the fourth-largest supercomputer vendor in the world. Listed on the New York Stock Exchange under the symbol SGI, Silicon Graphics derives approximately 50 percent of its revenues from sales outside North America.



SoftAd

SoftAd is a provider of enterprise selling systems that support cross-department productivity and effectiveness. SoftAd is the industry leader in the area of Sales and Marketing Automation providing Internet and client/server solutions to the Fortune 1000. With WebExcellerator, SoftAd combines its expertise in Sales and Marketing processes with the power and universality of Internet technology, making it the first vendor to deliver a complete, Internet-based, enterprise selling solution. SoftAd's partners are among the most forward-thinking corporations in the world. Visit www.softadgroup.com for more information about SoftAd's products.



Described as the "King of the Internet" by Business Week magazine, **Sun Microsystems, Inc.** is the premiere provider of open systems and solutions for the enterprise and Internet. Among the Internet and networking technologies developed at Sun are: NFS, the open standard for file sharing across networks; Java, the first programming language to provide a comprehensive solution to the challenges of delivering applications across public networks such as the Internet; HotJava, an interactive, multimedia Internet web browser; Netra, a "plug and play" solution for Internet connectivity to PC-LANs; and SunScreen, a sophisticated network security solution. Sun, a Fortune 120 company, was founded in 1992 and has annual revenues of \$6 billion and 14,000 employees worldwide. Sun Microsystems is headquartered in Mountain View, Calif.



Headquartered in Emeryville, CA, **Sybase, Inc.** is a worldwide leader in distributed, open computing solutions with record revenues in 1996 of over \$1 billion. The company provides customers and partners with a complete set of software and services to create Internet and Intranet business solutions for strategic, competitive advantage. The company offers high-performance, end-to-end solutions including databases, middleware, and application development tools for client/server, Internet and Intranet transaction processing and data mart and data warehousing applications. The company's Internet addresses are www.sybase.com and www.powersoft.com.

ENROLLMENT FORM

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Sunday, May 18 – Wednesday, May 21, 1997

Doral Golf Resort & Spa, Miami, Florida

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- ☐ **Companion Program (\$250):** Companions must be enrolled in this program to attend any conference-related functions. Includes all scheduled meals, entertainment and companion get acquainted breakfast. Conference session attendance not included.
Please choose one: ☐ **Golf Clinic** ☐ **Tennis Clinic**
- ☐ **Network Security Workshop (\$85):** Sun Microsystems, Inc., the leader in large Internet networks, will be conducting a Network Security Workshop at the Doral Country Club following the WebMaster conference on Wednesday afternoon, May 21, 1997. The Workshop will include lunch, with a discussion on Public Policy issues, followed by a set of highly impactful presentations and discussions on network security. Please reserve a place for me and send me more information.
- ☐ **Golf Tournament:** Yes, I'd like to participate in the golf tournament on Sunday, May 18 at 10:00am Hosted by Sun Microsystems, Inc. Please send me more information.

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HOTEL ACCOMMODATIONS

A block of rooms has been reserved at the Doral Golf Resort & Spa. We urge you to make your reservations early by calling the hotel at 305 592-2000. Be sure to identify yourself as part of the WebMaster conference to receive the conference rate, and make your reservations early. Please guarantee your room with a credit card, as all unreserved or unguaranteed rooms will be released on 4/14/97. Hotel reservations/cancellations and charges are your responsibility. WebMaster will make hotel reservations for government and military participants only.

TRANSPORTATION

American Airlines is the official conference carrier. Call American at 800 433-1790 and reference Star File S1457MA. AVIS is the official car rental provider. Call AVIS at 800 331-1600 and reference B766657. Shuttle service is also available to and from Miami International Airport by calling 305 371-2000.

ENROLLMENT FEES

All enrollment fees must be paid in advance of the meeting. Fee includes conference sessions, concurrent sessions, corporate host displays, conference materials and scheduled meals. Transportation, hotel and recreation are your responsibility.

CANCELLATION

You may cancel your enrollment up to 5/9/97 without penalty. No refund or credit will be given for cancellations received after 5/9/97. You may send a substitute in your place.

CIO reserves the right to decline enrollment to any registrant.

TO ENROLL: FAX THIS FORM TO 508 879-7720 OR VISIT OUR WEB SITE AT www.web-master.com

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Publisher's Note

If you're thinking about setting up companywide Internet access or if your company is already up and running on the Internet, we've got a few questions: Do your employees surf ESPN SportsZone on company time? Does unrestrained use of the Internet tie up bandwidth and affect access speeds? Do your employees illegally download and print copyrighted material?

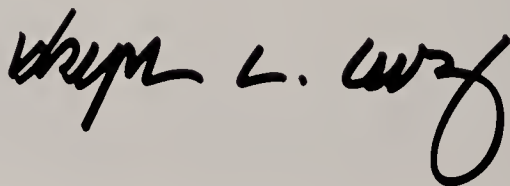
Does your company even *have* a policy in place to deal with such issues?

If you're unsure of your answers to those questions or if you've never even thought about them, you'll want to read our report, "Maximizing The Internet: Policies, Procedures & Best Practices." In it, CIO Communications Inc., in partnership with researcher ICEX Inc., set out to learn what executives are doing to develop, set and enforce Internet policies within their organizations. The report, part of CIO's Best Practices Series, focuses on understanding the formal (and informal) policy choices companies are making to derive benefit from the Internet's vast resources

while still maintaining acceptable levels of security, productivity and efficiency.

According to our report, the typical company with an Internet policy claims more than \$1 billion in annual revenues, employs 5,000 or more people, considers the Internet an important business issue, is in the professional services or manufacturing industry and has a corporate Web site. Small companies tend to have fewer formal policies than more-established enterprises, and that certainly holds up where the Internet is concerned. The report also reveals that the CIO has policy-setting responsibility most often; yet when it comes to enforcement, the webmaster is responsible. It is interesting to note, though, that in companies where the Internet is considered a major business issue, the CIO or business executive becomes the enforcer.

The report also covers the challenges in creating policies, monitoring Internet use and setting sanctions for improper use. It also explores who is responsible for design, development and management of a Web site. You can purchase the report for \$395 by visiting our Web site at www.cio.com/CIO or by contacting Denise Perreault at 508 935-4443.



P.S. Join Geoffrey Moore, Nicholas Negroponte and Dr. Ruth Westheimer at the next WebMaster Perspectives conference, "A Tale of Two Webs: Making Your Intranet and the Internet Pay Off," May 18-21 at the Doral Golf Resort & Spa in Miami. Call 800 355-0246 or visit www.web-master.com to register today.

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Trendlines

NEWS, INSIGHT, HUMOR, REVIEWS

Edited by Alice Dragoon

Open Spaces

OFFICE GEOGRAPHY You've worked hard for that corner office on Executive Row, but it may be that offices are becoming a thing of the past. With team building and collaboration on the rise, some companies are rethinking the corporate terrain, replacing individual offices with more flexible, open workspaces.

Andersen Worldwide Services, the central services group of professional services provider Andersen Worldwide, reduced its number of offices from 300 to 60, downsizing many to one-third their former size. And global building materials company Owens Corning has virtually eliminated individual offices. The chairman and his senior staff sit in an open space in the middle of the second floor. "Not in the corner, not even next to a window," says

Owens Corning Vice President and CIO Michael Radcliff. Radcliff himself sits in the middle of his IS group, where everyone shares the same furniture and is separated from other workers by low partitions.

To many executives, giving up their doors and windows is a small price to pay for a workplace that reflects the corporate culture. In the case of Owens Corning, the company left a 30-story skyscraper for its new, three-story headquarters building in Toledo, Ohio, in September 1996. Supporting the company's goals of globalization, growth and teamwork, the new space is open and modular and can be reconfigured; walls exist only in

conference rooms and collaboration areas. Employees sit with their teams and communicate with remote colleagues via videoconferencing and electronic



Variabilizing Scope Creep

SCALABLE SOLUTIONS Looking for a value-add that your flexible workforce can leverage on the fly? SolidSolutionz, a new turnkey application from the evangelists at Sea-Eye! Oh, lets stakeholders offload meta-deliverables even as they roll out mission-critical bolt-ons to the pilot marketplace. The super-sexy framework stems the tide of global data slippage by enabling an incrementalized greenhouse paradigm shift designed to reduce time-to-market—before the 11th hour. And if that alone won't convince you to deploy SolidSolutionz across the enterprise, consider this: Re-architecting mind-share is the quick fix most often brought to the table by product champions. So don't wait for another beta test to get executive buy-in for this killer app. For pricing information and the bottom-line metrics, align your browser to hahaha.aprilfools.com.

—Sara Shay

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BRING US YOUR HARD PROBLEMS™

Trendlines

whiteboards. The company has reduced paper use by 50 percent and is working toward eliminating paper altogether. Each workspace has a single file cabinet, so it's easy to pick up and move, and technology is completely plug-and-play. "You can get things done in a minute that would've taken a week before," says Radcliff. "Instead of scheduling a meeting, you just run into somebody in the workspace and get your question answered."

At Andersen Worldwide Services' new offices in Chicago, "activity settings" enable people to move from one area to another for specific work processes. Modular furniture on wheels, wireless phones, and mobile file cabinets and workstation technology aid collaboration. "We are not only changing where we work but how we work," says Bruce Turkstra, the Andersen partner managing the transition. "The new environment will help lower barriers to communication within and between departments and make stronger use of technology to better serve our clients."

"Designing a space to reflect corporate culture is not overwhelmingly common yet, but it is gaining momentum," says Rick Mohr, manager of the advanced solutions team at Steelcase Inc. in Grand Rapids, Mich., an office furniture manufacturer that helps its customers design smart workspaces. Mohr predicts that more companies will redesign their space when they realize it is not being used as efficiently as it could be. At any one time in the average workplace, just 30 to 40 percent of people are sitting in their designated spots, says Mohr. The remaining space sits vacant while its inhabitants collaborate elsewhere with others.

Of course, simply renovating space won't itself lead to change. "If managers are intending space to be the primary driver for change, they're setting themselves up to fail," says Mohr. "Space is a critical enabler of change, but the strategy is driving the change, not the space. Space should be treated as a tool."

—Jennifer Bresnahan

Not All Fun and Games

TETRIS TECH Thinking about a career change? The new DigiPen Institute of Technology in Seattle is now accepting applications for its four-year video game development program. A spinoff of DigiPen Applied Computer Graphics, a Vancouver, British Columbia, school that teaches nondegree courses in computer animation and video game technology, the institute offers the world's first baccalaureate degree of science in real-time interactive simulation.

Lest you think the program is just a social forum for joystick-wielding adolescents, be aware that DigiPen is not a school for the faint of heart. Students in the two-year program in Vancouver report that they have very little time for recreational game playing. "A typical day usually involves taking classes from 10 a.m. to noon and 2 to 4 p.m., then working on assignments until 10 p.m., when the school closes," says student Kevin LaCoste. Graduation requirements for students working toward the baccalaureate will include courses in math, physics, operating systems, image processing, animation, and computer and video game technology. "Games are very serious and very complete pieces of software," says Claude Comair, president and founder of DigiPen. "People think, 'a game is a game,' but it has to be real-time; it has to be responsive."

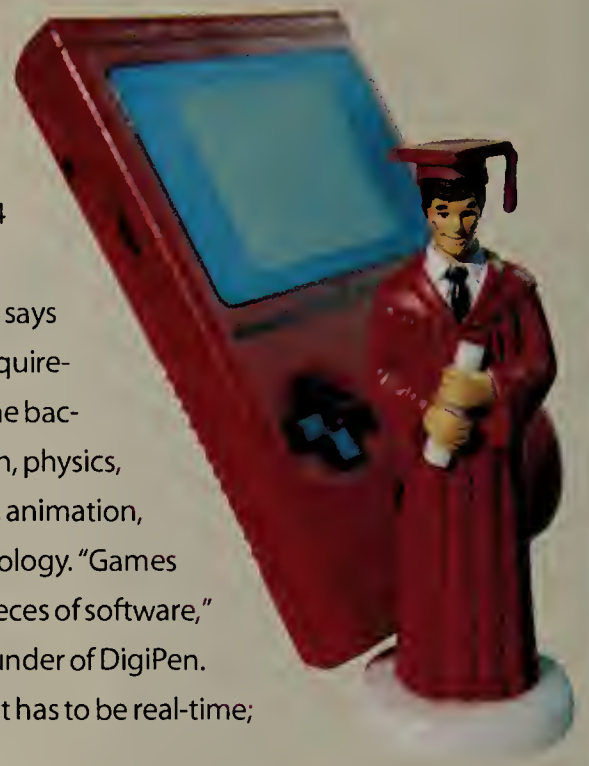
DigiPen may seem to cater to a tiny niche of the post-secondary population. But based on preliminary inquiries, the school projects that the program will attract more than 10,000 applications for the 100 spaces available in its inaugural class of 2001. "The video game, computer animation and special effects industries are thirsting for new talent," says Comair.

Like the Canadian branch of DigiPen, the new institute is heavily funded by Nintendo of America, which provides free hardware and software to the schools and is on DigiPen's advisory board. Although Nintendo does employ some graduates, Comair says that the students are under no obligation to work for Nintendo when they complete their studies.

Admission requirements include a strong math and science background, but creativity is just as important. Applicants are encouraged to send their original samples of, well, anything. "We don't tell very clearly what kind of portfolio we want," says Comair. "We want to see what people will choose to send us."

So if you're looking to cast off your corporate image, or if you just want to offer your Bomberman-obsessed teenager an attractive educational opportunity, order the DigiPen course catalog and application by visiting www.digipen.com.

—Sara Shay





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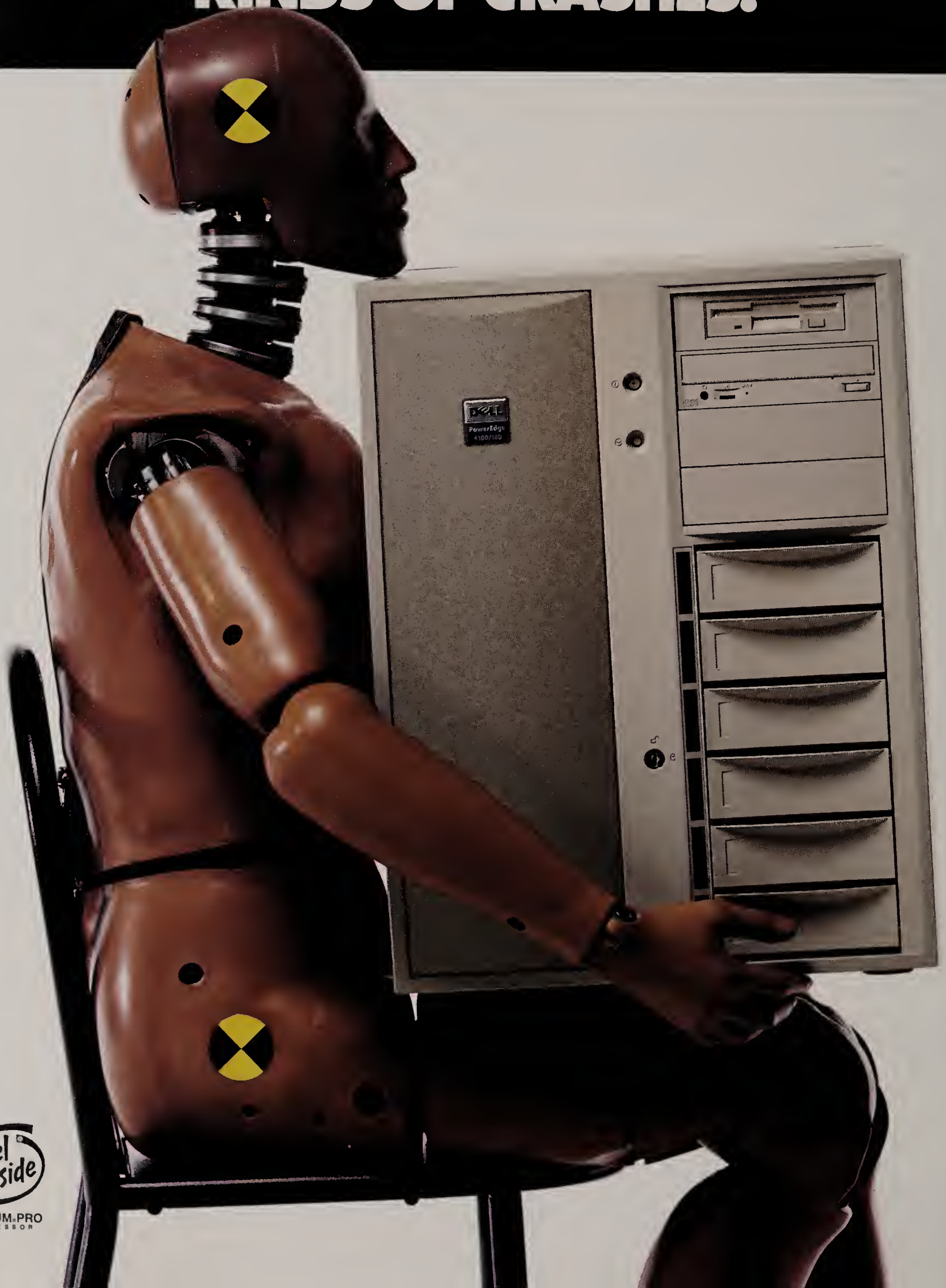
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Trendlines

Off the Shelf

Ignore That Man Behind the Curtain!

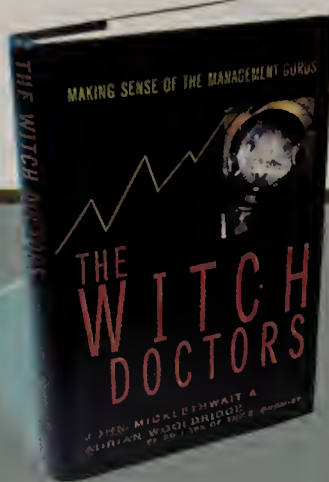
The Witch Doctors: Making Sense of the Management Gurus
John Micklethwait and Adrian Wooldridge, Times Books, 1996, \$25

THE WIZARD OF OZ would have made a terrific management guru, according to John Micklethwait and Adrian Wooldridge, the two staff editors of *The Economist* who have given us **The Witch Doctors: Making Sense of the Management Gurus**. He did not know much, but he sure sounded like he did. Much of the snake oil sold in the past 30-odd years under the label "management theory" hasn't done anyone a whole lot of good, and some of it has done outright harm. But that situation hasn't stunted one of the fastest-growing industries on the scene, professional advice-giving (Gartner Group Inc. predicts that management consultancies will bring in \$21 billion in 1999). Some of the experts are academics; some of them are consultancy groups; a few are individuals who achieve star status. But Micklethwait and Wooldridge are of the opinion that most earn their fortunes by treating clients like mushrooms: Keep 'em in the dark and feed 'em manure.

Information executives who invest the time to read this book will earn a handsome return. Should you believe, like the philosopher George Santayana, that those who cannot remember the past are condemned to repeat it, here's the book that will spare you from that fate. If you lived through reengineering or total quality management or strategic planning or management by objectives or *Kaizen*, or if you've rethought your company so often that you're persuaded a core competency is something that remains after you've munched an apple, you'll be amused at the authors' retrospective analysis of each of these waves of management panaceas. If your career began after a recent stint in B-school, you'll need to know just what all the hoopla was about; if you are attending B-school now, and if you are lucky enough to have a prof who is one of those eminences before whom Big Business bows, you'll want this book as a counterpoint to whatever theory is being shoveled to you as Holy Writ. After all, you wouldn't want to graduate and discover you're a mushroom, would you?

While offering delicious gossip about such matters as the large consultancy that rigged *The New York Times* best-sellers list so that the latest tome from one of its number looked like a book everyone was snatching up, *The Witch Doctors* also contains intelligent summaries of the successful ideas that have changed business in the past two decades. These writers aren't smart alecks making easy fun; they give credit where credit is due. They also go out on a limb more than once to make some predictions about the nature of work, middle managers, globalization and how the public sector will change because of new management initiatives.

Clearly written, level-headed advice that hasn't been shipped from over the rainbow and is this inexpensive is hard to come by. Here's a rare case where the advice is worth a lot more than what you'll pay for it. Spend some time with this one; you'll come away richer for it. —Perry Glasser



A Kick in the Habit

BEHAVIOR MODIFICATION So it's April already and you still haven't quit smoking or stopped eating that junk food you resolved to give up last New Year's Eve. But even if you have less willpower than Miss Piggy, you still may be able to control those bad habits with the help of two wallet-sized computers from Personal Improvement Computer Systems Inc. of Reston, Va.

The LifeSign computer is designed to help you stop smoking or chewing tobacco by breaking your nicotine addiction gradually. Over the course of two to five weeks, depending upon your habit, LifeSign automatically signals you when it's time to smoke or chew, decreasing the frequency by degrees

to slowly reverse the process that got you hooked. LifeSign, which sells for \$89.95, was developed and tested with the help of research grants from the National Cancer Institute and the National Institute on Drug Abuse.

Personal Improvement's second new computer system, the DietMate, lets you program a personalized diet and exercise plan. It also helps you stick to it by keeping track of every calorie you consume—and by telling you exactly how much exercise will be required to work off each morsel. Knowing it'll cost you a half-hour on the treadmill may be all you need to resist that extra teeny-tiny after-dinner wafer mint. The device also monitors your nutrition, weight, cholesterol level and blood pressure. A grant from the National Institutes of Health helped finance development of DietMate, which costs \$197.50.

Both systems are available at www.lifesign.com or by calling 800 LIFE-SIGN. ■



ILLUSTRATION BY JAMES KACZMAN, PHOTO BY VITO ALUIA

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Trendlines

Findings Global Survey of CIOs

A World of Opinions

Just as we've all suspected, practically everybody in the world has best-laid plans to build big client/server systems. But most can hardly find a soul who knows how to run such platforms.

That's a broad reading of the tea leaves in Deloitte & Touche LLP's recent global survey of 1,442 CIOs. The study found that nearly 70 percent of the CIOs expect to replace their legacy systems with client/server setups within the next two years. However, a similar majority say they are encountering problems in recruiting client/server technical architects and distributed-database specialists.

Deloitte & Touche divvied up the survey respondents into five regions: North America (31 percent of response base), North Pacific Rim (19 percent), South Pacific Rim (15 percent), Central Europe (19 percent) and Western Europe (16 percent). Each region shows a distinct set of trends. For example, the majority of CIOs plan to replace legacy systems with off-the-shelf software packages, except in Central Europe and the North Pacific Rim, where more CIOs prefer custom software development. North Pacific Rim IS executives report that 84 percent of mission-critical systems reside on legacy platforms, whereas only 49 percent in Central Europe do.

The CIO position is apparently new in many of the surveyed regions. Nearly a third of all respondents report that they had no predecessor, including a whopping 42 percent in Central Europe. (The survey failed to ask these first-time CIOs whether they expect to have a successor.)

Among applications and system technologies, data warehousing and document management emerged as the most commonly named areas of promise. Windows 95 and NT media blitzes aside, 70 percent of the CIOs still consider Windows 3.X an important client operating system. Novell Inc.'s NetWare holds similar mind-share dominance on the server side. Almost 45 percent of the respondents rate both Windows 95 and NT as important. On average, CIOs spend 20 percent of their budgets on networking products and services; ATM is the most significant network technology in all areas except North America, where switched Ethernet takes priority. Nearly 80 percent say they expect to increase spending on Internet technology and services this year, but a meager 13 percent anticipate ever using the Net to conduct business transactions. The biggest barrier to electronic commerce? Security.

To obtain a copy of the "1996 Global Survey of CIOs," call Deloitte & Touche at 404 220-1297. *—Derek Slater*

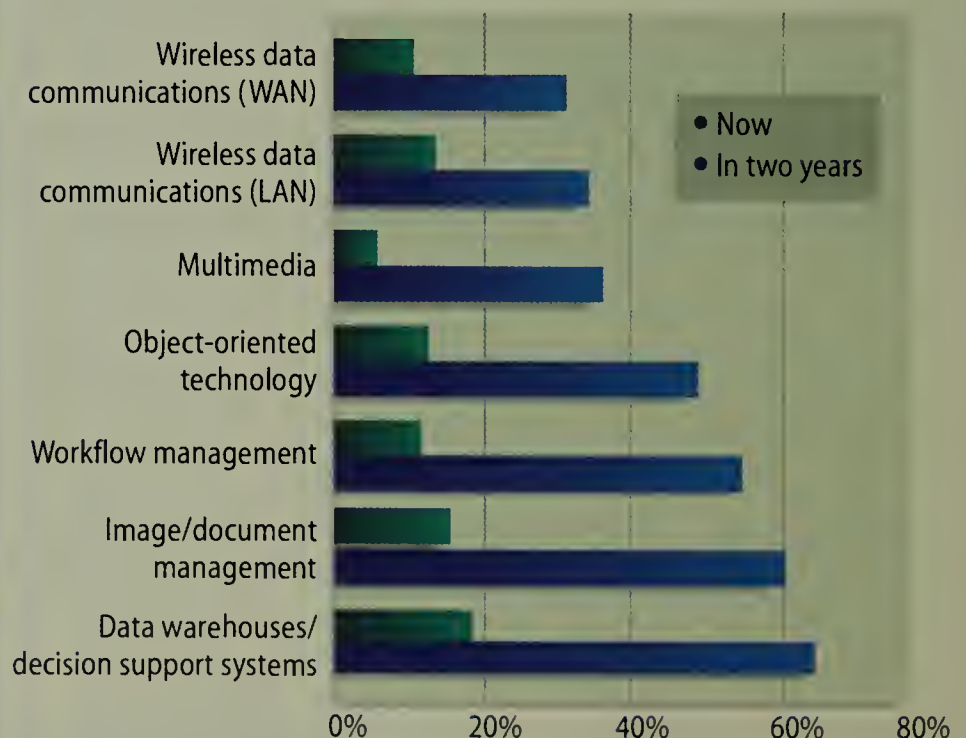
Joseph A. Luppino, director of IS services, global IT infrastructure, at Eastman Kodak Co. in Rochester, N.Y., on the difference between choosing a full-service outsourcing vendor and opting for a best-of-breed selective service provider:

"In some cases, you want a McDonald's, where a Big Mac's always going to be a Big Mac—you know what you're getting. In some cases, you want a Burger King that will make it your way. We've got a little bit of both right now."

For more on outsourcing, see our Outsourcing Buyers Guide beginning on Page 46.

The Most Important IT in the World

Percentage of CIOs worldwide who rate these technologies as important (1,442 CIOs responding)



SOURCE: DELOITTE & TOUCHE'S "1996 GLOBAL SURVEY OF CIOs"

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Farewell to the Big Bang

Vendors, users and executives alike will have to adjust to new rules as component-based packaged applications make rollouts ongoing affairs

BY BOBBY CAMERON

IMPLEMENTING A PACKAGED client/server application, such as financials or accounting, can easily cost tens of millions of dollars.

Nearly two-thirds of 40 Fortune 1000 companies interviewed by Forrester Research Inc. attribute 75 percent of that expense to the cost of "help" vendors—systems integrators and consultants who supply the skills and bodies to make the transition from the old system to the new. Such projects are massive undertakings directed toward major, corporatewide change.

But large companies will use help vendors differently in the future. Components, standards and Internet technologies will lead to fewer large projects—and an ongoing stream of smaller ones. That will propel the help industry toward fixed-price, fixed-time implementation engagements.

Continuous Implementations

By 1998, three new dynamics will change how Fortune 1000 corporations manage their packaged applications: **1. Component-based applications from multiple vendors will top companies' shopping lists.** Only 23 percent of the large companies interviewed expect a single-package supplier to meet all of their needs. They trade the efficiencies of a single application suite from a single vendor for the flexibility of best-of-breed alternatives. With the alternative strate-

gy, the average large company spends 30 percent of its IT budget on integrating solutions provided to it by multiple vendors. Most see that expense as a fundamental part of their business and don't expect it to change a great deal over the next five years. Luckily, most major package vendors have a component strategy, and interoperability standards are on the way—promising to make the integration effort easier.

Package suppliers' component strategies vary. Some suppliers, such as Marcam Corp. and QAD Inc., are using standard technologies like C++ to build small objects that they bundle into the products companies can buy. Others, such as Baan Co. and J.D.

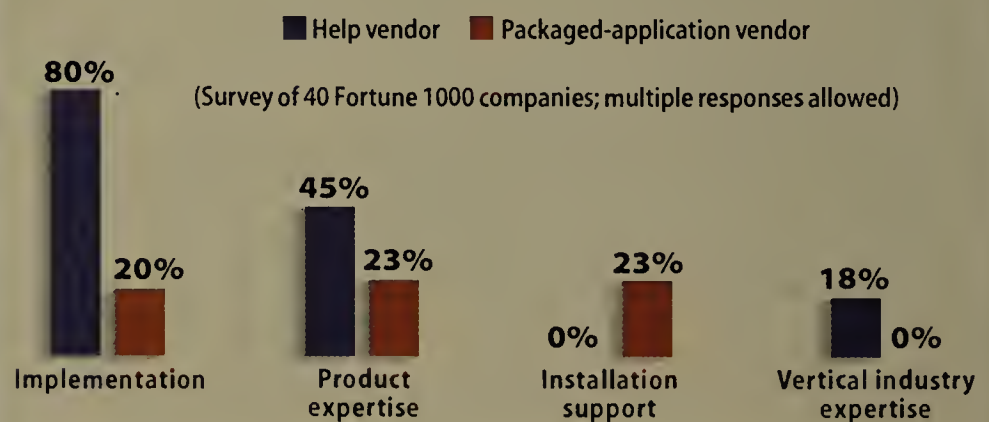
Edwards & Co., use proprietary technologies to generate fewer larger components that make up the modules they sell. Even SAP AG, historically the king of tightly integrated, single-vendor suites, has announced that it will break its R/3 enterprise software into separate, standalone application pieces, tied by open interfaces to each other and to products supplied by third parties.

Interoperability standards will help mixing and matching multivendor components significantly—although an equivalent to the PC's mix-and-match capabilities is unlikely. SAP's interfaces, or BAPIs (business application programming interfaces), are becoming the de facto industry standard. Driven by R/3's market dominance, many competing application providers are developing solutions that plug into SAP's evolving interfaces. By late 1998, Forrester expects BAPIs to be the official open component interoperability standard, as organizations such as the Open Applications Group (OAG) endorse SAP's as the approved set of integrated interfaces.

The exploding success of Internet technologies will add a significant wrinkle to application-component strategies. Many application vendors will deliver their solutions using

Who You Gonna Call?

"What were the roles of vendors?"



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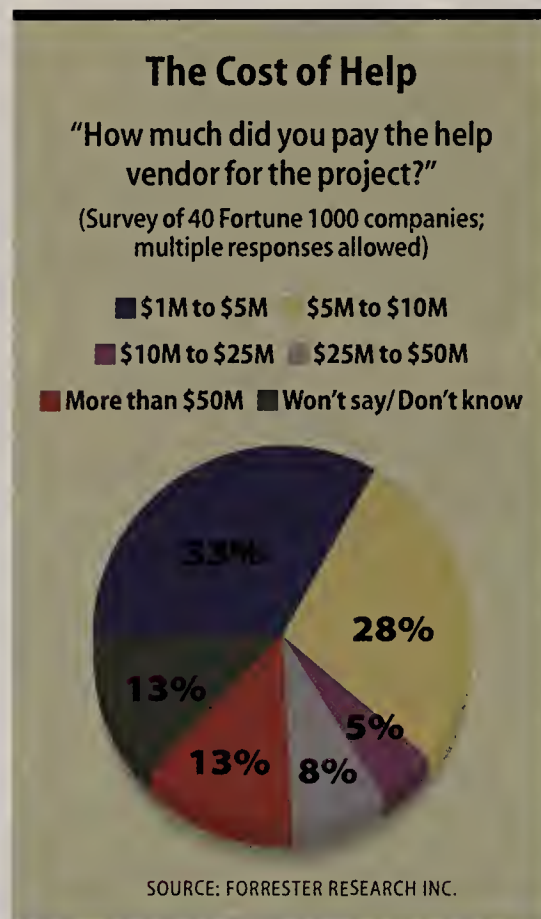
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Forrester View

Internet computing technologies—Java-style client/server on demand, with clients reaching across intranets and the Internet to multiple, dispersed servers in a multi-tiered “client-to-servers” model. Amazingly, two-thirds of large companies expect to be able to execute portions of their application packages from within a browser. By 1998, they will be able to purchase Internet computing components from progressive vendors such as Lawson Software, J.D. Edwards and PeopleSoft Inc.

2. Applications will be replaced piece by piece rather than all at once. One driver for the use of component applications is the desire to avoid today’s difficult-to-manage implementation projects. Many companies can’t afford big-bang rollouts, and the rest want to try it only once. Even corporations committed to a single supplier have begun breaking the package implementation into smaller, manageable efforts—sometimes spread over five or more years. Using interoperable com-



ponents, whether from a single vendor or multiple vendors, companies can introduce only what they can manage.

3. Application buying will target industry-specific applications. Corporations’ piece-by-piece implementations and the availability of component products will nurture the growth of vendors whose products target specific user purposes—like real-estate management for an oil company. The difficulty of making an industry-focused package interface with a variety of general solutions often results in companies settling for less-effective products from their suite vendors, modifying niche-based solutions or even building their own. But the advent of interoperability standards will allow small, targeted package suppliers to cost-effectively deliver solutions that both meet the niche-buyers’ needs and integrate with core business applications.

Help Is On the Way

These trends in the adoption and implementation of component-based applications will affect how corporations and vendors work with each other.



Nick Hanauer, Sr. Vice President, Sales and Marketing, Pacific Coast Feather Company.

■ **Help will come more frequently—but in smaller chunks.** The continuous stream of component implementations will require ongoing help. Some projects will still be multimillion-dollar efforts, but most will be smaller, such as converting today's engineers-only product data management application into a sales and marketing tool. Help vendors will be used more often, but companies implementing package components will still contract for services on a project-by-project basis.

■ **Packaged-application buyers will seek help from a wide array of vendors.** The need for specialty skills—such as vertical-industry knowledge or niche-oriented package expertise—will cause information executives to get help from multiple suppliers. The demands of the multivendor mix-and-match approach to packages will be too complex for any single help provider to meet. That will be particularly true for application components being bought by a

small number of companies—making it tough for the generalist help vendor to make money.

■ **IS will establish a permanent implementation team.** Most IT shops treat package implementations as special events, creating specialty teams for the project at hand. But the constant activity will motivate large companies to staff an implementation squad of top-notch planners and project managers who do nothing but roll out new components.

■ **Help will become less than half the cost of an off-the-shelf implementation.** As much as 70 percent of package implementations is consumed by big business-process-reengineering activities. Small application installation efforts will be accompanied by simpler business changes, reducing the cost of the business changes associated with each implementation. The more forward-thinking help vendors such as KPMG Peat Marwick LLP will deliver fixed-price, fixed-time implementations.

■ **Help vendors will become wedded to industry-specific markets.** The only way the help industry can make money from component-package implementations is to focus on industry-specific markets. Those vendors will position themselves with business and industry-specific skills based on application suites that they assemble and re-market from multiple package-vendors' offerings.

Solving business problems with technology is a never-ending process. What is changing is the length of time between significant shifts in both business needs and technology-driven opportunities. Fortunately, component-based packaged applications will allow companies to respond more quickly, upgrading business systems piece by piece in an ongoing, constant flow of change. **CIO**

Bobby Cameron, senior analyst in Forrester Research Inc.'s Packaged Application Strategies, can be reached at 617 520-5708 and bcameron@forrester.com.

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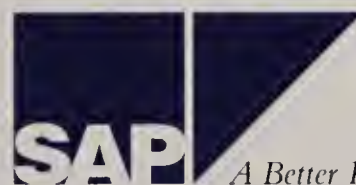
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far from The Bank on the River Charles

The surge in economic growth throughout South America poses some welcome problems for BankBoston's information executives

BY PETER FABRIS

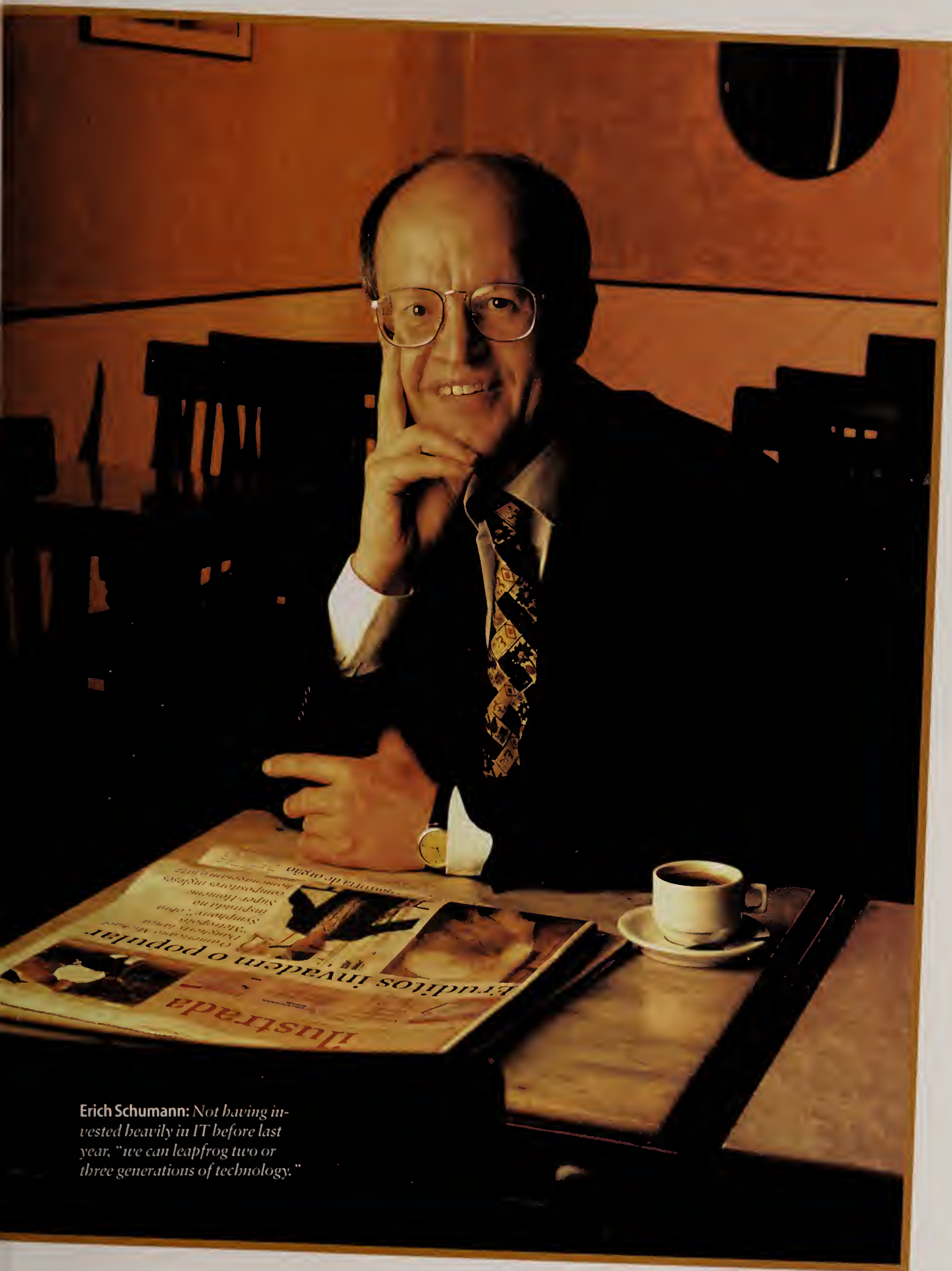
IT'S 2:45 P.M. IN DOWNTOWN BUENOS AIRES, ARGENTINA, 15 minutes before banks close for the day. Harried Argentines line up 30 deep before tellers at Banco de Boston's headquarters, a stately old building with an ornate marble facade. Many of them are cashing their paychecks to pay bills. Long lines and cash

Reader ROI

BANCO DE BOSTON is a major player in the South American banking industry. In this article, readers will discover:

- ▶ How IS supports rapid growth in a booming market
- ▶ How BankBoston's multinational presence translates into a competitive advantage in South America
- ▶ How an in-house IS consultant leverages corporatewide expertise to support IT operations in the region

transactions are the legacy of the 1,000-percent-per-year inflation common throughout much of Latin America during the 1980s. With no incentive to save money, Argentines spent it as fast they could because the peso would be worth less the next day. Residue from the fear created in those dark days still exists. Argentines still don't write many



Erich Schumann: *Not having invested heavily in IT before last year, "we can leapfrog two or three generations of technology."*

PHOTO BY PAULO FRIDMAN / LIAISON INTERNATIONAL

CIO ON THE ROAD

checks, says Mario Rossi, chairman of the executive committee for Banco de Boston in Argentina, who also oversees technology and operations. But economic attitudes are changing now that hyperinflation has abated, he says.

The years from 1982 to 1992 were difficult for banks in Argentina, the land of the tango, and neighboring Brazil, home of the samba. Wealthy South American coffee and mining magnates devised their own financial dance—placing their savings in U.S., Swiss or other European banks where money retained its value. With insufficient deposits as a base, many ordinary bank services ceased. For example, between 1985 and 1995, Banco de Boston do Brasil, BankBoston's Brazilian subsidiary, had no home-mortgage business. But with today's stable currencies in both Argentina and Brazil and with governments promoting free trade in South America, Banco de Boston is poised for rapid growth. "Brazil in particular is an amazing country," says BankBoston's vice chairman and CFO, Bill Shea. "The opportunities for us there are surpassed only by some countries in Asia."

Growing Pains

IT will play a crucial role in maximizing those opportunities. In 1996, the bank's Brazilian headquarters in São Paulo, a smog-choked industrial megalopolis and the world's second-largest city, invested \$57 million in IT and will spend an additional \$40 million on technology in 1997. Those are lofty IT investment levels for BankBoston's Brazilian operations. In the early 1990s, the annual technology budget was less than \$20 million. "The downside is that we have to invest a lot now," says Erich Schumann, vice president of Banco de Boston's Brazilian headquarters in downtown São Paulo, where he is responsible for internal operations, including IS. But, not having invested heavily in IT before last year, the bank is not saddled with tired legacy systems. "We can leapfrog two or three generations of technology," Schumann says.

Due to hyperinflation and unstable governments, South American managers' strategic plans in the 1980s and early 1990s were subject to change weekly (see



Mario Rossi is happy to plan for 25 percent annual growth.

"Southern Exposure," *CIO*, Feb. 15, 1997). With inflation cooled to less than 10 percent annually in Argentina, Brazil and Chile, BankBoston's best Latin American markets where three governments support consistent free-market

policies, bank executives can now plan for the long term. According to Schumann, another helpful change in the economic climate occurred in 1991, when the Brazilian government eased tariffs on IT, making computer prices roughly the same as in any other region outside the United States—about 25 to 30 percent above U.S. prices (see "Sud América," *CIO*, Feb. 15, 1997).

Those who envision ancient stand-alone PCs and 1970s-era mainframe legacy systems when thinking about South American IT would be taken aback by Banco de Boston's operations. In fact, in some ways the Brazilians are ahead of IS at Boston headquarters.

For example, Banco de Boston do Brasil is implementing the latest branch-automation system from a Brazilian company called Argo Data Systems, a Microsoft Windows NT-based platform, whereas the U.S. and Argentine groups are using an earlier generation of the system running on IBM's OS/2.

Healthy growth rates allow Schumann to justify major capital investments in IT. "We are fortunate to have had good financial results," Schumann says. Banco de Boston's earnings are growing at 50 percent per year, he says. Schumann's counterpart in Argentina, Mario Rossi, says planning for 25 percent annual growth is a welcome problem. "Managing growth can be as risky and challenging as managing during downsizing, but it also

TECHNICAL PROFILE

BASIC CORPORATEWIDE STANDARDS:

IBM Corp. mainframes for large data centers; Intel Corp. PCs; LANs operating on Novell Inc. OS

OPERATING SYSTEMS AND DATABASES:

MVS and DB2; Harte-Hanks Communications Inc. database marketing system

BANKING TOOLS:

Branch-automation system from Argo Data Systems, a Microsoft Corp. Windows NT-based platform

DOCUMENT WORKFLOW:

Optika Systems Inc.

INFRASTRUCTURE IN ARGENTINA:

IBM mainframes and AS/400 servers for large data centers; Argo Systems in larger branches and IBM 4702s and IBM 47XXs in smaller branches; LANs running on Novell 16Mbps token-ring fiber backbone; Microsoft Windows running on Intel-based desktop machines



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allows you to become more efficient less painfully," says Rossi. In other words, realizing BankBoston's goal of increased efficiency in Argentina doesn't necessarily require layoffs. "In the 1980s, we had about 1,800 employees with 12 branches," he says. "Today, there are 2,500 employees with 29 branches. By world-class standards that is still inefficient but more efficient than we were before."

During this hectic growth, IS makes sure staff members receive the proper training to implement new technologies. "In Brazil, it's difficult to get people who are up-to-date [on technology]," Schumann says. "[IS staff members] often have to work 14 hours a



Philip Stanley believes it is better not to impose standards from the top down.

day and then find the time to learn about future technologies."

Just as rapid growth poses training problems, it creates issues of managing costs and expanding systems. "Our mortgage business has gone from zero to \$5 million in one year," says Fabio Nogueira, manager of the bank's Brazilian mortgage business. "We forecast \$100 million [in 1997]." His goal is to hold down expenses while managing a skyrocketing business. "I have 19 people in my department," Nogueira says. "My plan is to keep head count stable." In order to meet that objective, he aims to outsource some nonstrategic loan-processing functions, "ones that do not affect the direct relationship with the client."

Multinational Management

Imposing standards and training can yield big returns, but the home office's most important resource is an open mind

WHEN IT COMES TO SOFTWARE applications, it's better not to impose standards from the top down, says Philip Stanley, BankBoston's director of business systems planning. Stanley is the liaison between IS in Latin America and IS in Boston. His mission is to help the Latin American branches share best practices both among themselves and with other regions, including headquarters in Boston. "I view my role as a coordinator and communicator," he says.

IS managers know their area's markets and environments thoroughly, he says, so it would be a mistake to impose application standards for systems such as tax reporting. "Companies in Chile and Brazil particularly have tailored their [software applications] to the needs of

local businesses."

Let those who know their regional IT markets and local regulations decide which applications to buy, Stanley says.

BankBoston is striving for global standardization, however, on hardware, operating systems, routers, hubs and databases as much as possible, Stanley says. "The IT infrastructure is the same worldwide," he says. The main benefit of that strategy is cost savings. The more equipment and software you buy from a single vendor, "the better your bargaining power," he explains. That is true for maintenance agreements as well as initial purchases.

In addition to saving money, technical standards make it easier to generate "consistent business strategies as well as integrated reports and financial statements," Stanley says. For example, a common IT architecture with universal standards makes it much easier to support a future

project, such as the bank's plan to develop a global treasury system, Stanley says.

In addition to advocating technical standards, Boston headquarters provides training to Latin American IS personnel on new projects. For instance, several of the bank's Brazilian IS employees are scheduled to receive two weeks of training in Boston this winter on a variety of headquarters systems. The bank plans to train more foreign IS staff in Boston, Stanley says. The objective to reach global IT standards makes worldwide training support more practical.

Since Stanley became the IS liaison in December 1995, he's been amassing a lot of frequent flyer miles. "I've been down there five times for a total of 10 weeks," he says. Most visits include stops in Brazil, Argentina and Chile—the bank's primary markets in the region. Between trips, Stanley speaks by phone (in English, the common language of business in Latin America) two or three times a week with IS managers in the three countries. He also keeps in touch regularly via e-mail and uses videoconferencing during special projects. BankBoston executives review major South American projects every six months, Stanley says.

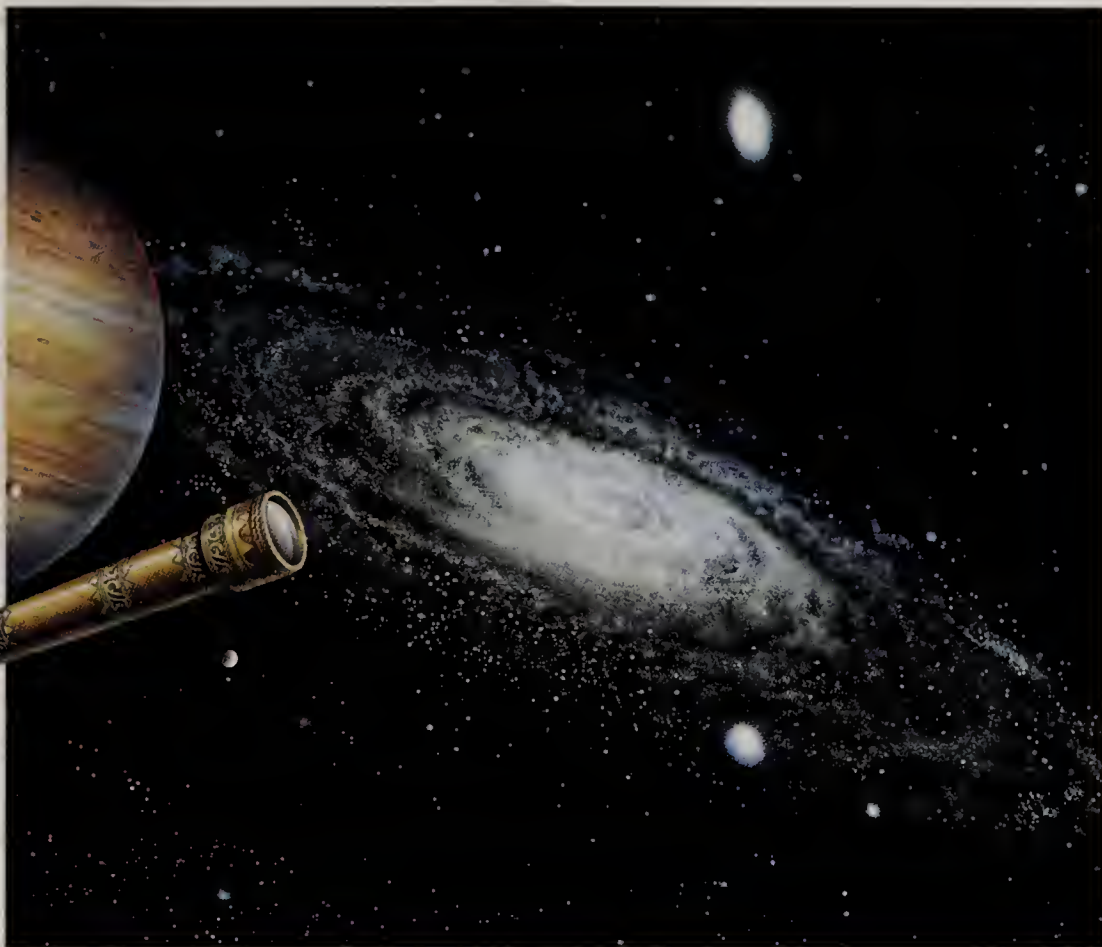
Stanley admits to having had a preconception that South America was an IT backwater, a notion he quickly found to be false. "I've been surprised about how up-to-date [IS personnel] are down there," Stanley says. For example, the bank's Brazilian office is developing an Internet home-banking system. Although hampered by slow telecommunications service, the Brazilian IS staff has a good working knowledge of Internet technology and is up to the challenge, he says.

When providing guidance on Internet projects or any other IT initiatives in South America, "the most important thing is not to approach the assignment with a fixed program in mind." Encourage your people in the region to work together, Stanley suggests: "Let those interactions determine what happens." —P. Fabris

Galileo combined data with new technology, drew conclusions from careful observation and informed others of his astounding findings.

When Galileo first peered through a telescope, he saw something that would radically alter man's view of

his position in the cosmos — evidence that the earth was not the



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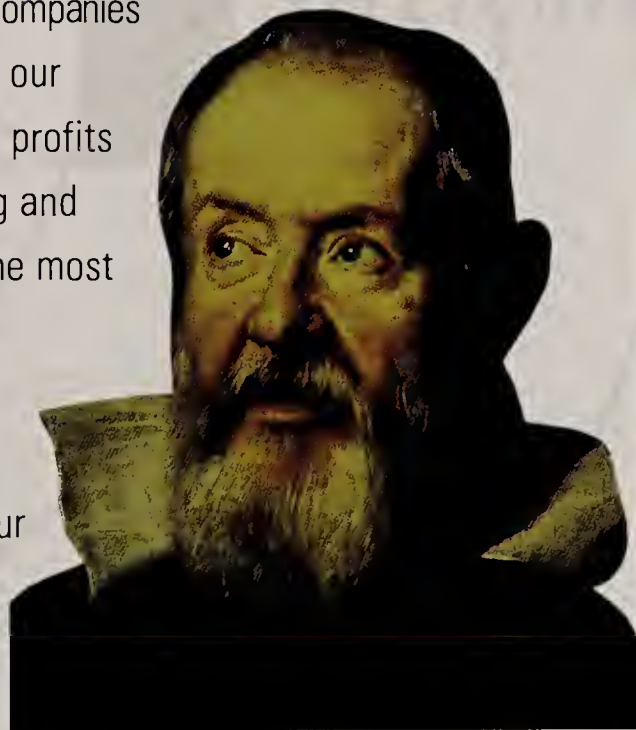
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IS supports the fast-growing mortgage business with a client/server system using a Sybase database and an Optika Imaging Systems Inc. document-workflow system. Mortgage applications need the imprimatur of a number of bank personnel. For instance, some workers perform credit checks while others assess legal issues concerning the purchased property. During the complicated approval process, customers need accurate forecasts of when their loan applications will be acted upon so that, assuming approval, they can schedule an appropriate closing date. The old benchmark for processing mortgages was 120 days; reengineering cut that to 50 days. After full implementation of the new system, Powerflow, the bank expects mortgages will be turned around in 25 days. The system has automatic alarms that warn the originator of the loan if it gets bogged down in one department. Nogueira says the system will yield other efficiencies; for example, electronic appraisal-form images will be attached

to documents within the workflow system. That capability is crucial to the bank's customer service goals. "We can

systems to support that business.' We helped them build their mutual fund systems."

Operating income for BankBoston in Brazil grew 41 percent in 1995 to \$84 million.

The Wall Street Journal, July 26, 1996

create tentative schedules for clients," Nogueira says.

Multinational Leverage

BankBoston's new push to share IS best practices globally helps the bank overcome the task of keeping up with new technologies (see "Multinational Management," Page 40). Brazil, for example, is "very strong in the mutual funds business," Schumann says. So when the Argentine headquarters began work on a mutual funds system in 1995, "we said, 'Look guys, we already have

South American IS managers have a dotted-line relationship with the CIO in Boston, says Philip Stanley, the Boston-based director of business systems planning. Stanley's job is akin to that of an in-house consultant for Latin American BankBoston technology managers. Although Latin American IS managers have a good deal of autonomy, their major projects are reviewed. "We need approval from Boston for projects over \$250,000 or for projects involving new technology, such as image processing, because we want to have the same platform in all countries," says Luiz Carlos Betti, the bank's IS manager in Brazil. Betti declined to comment when asked if he was annoyed by the restriction, but he says he supports the bank's goal of globally standardized platforms.

The restriction doesn't seem to be hampering innovation in Brazil. Betti is overseeing the development of several projects: "Branches at Work," self-service mini-branches located in the offices of corporate customers that include ATMs with checkbook dispensers; online banking; an integrated voice-response telephone information service that customers can use to check account balances and transfer funds; and a debit card system in cooperation with Visa. Although investors regard South America as a "developing" region, Banco de Boston's IT projects certainly do not reflect backwardness. By leveraging IT resources on a global scale, IS will continue to be a key contributor to growth while maintaining Banco de Boston's future with a distinctly Latin flavor. The company's investments and longevity in the region reveal its commitment to grow with the emerging markets of South America. 

Staff Writer Peter Fabris can be reached at pfabris@cio.com.

Climbing Out of Debt

Since the early 1980s, when banking in Latin America required a strong stomach, the financial scene has mellowed

THE INTERNATIONAL BANKING community wrote off billions of dollars in Latin American debt after Mexico defaulted in 1982. BankBoston's share was \$300 million. Mexico's difficulties sparked a debt crisis that engulfed much of Latin America. Many countries were unable to maintain interest payments, let alone repay debt. Investment and imports dropped, preventing debtor nations from getting out of debt. Growth rates fell sharply, a crisis from which the world of finance still has not recovered fully. Today, BankBoston's executives and investors have regained confidence in the region and see it as a major growth opportunity.

With over 100 offices in 24 foreign countries and \$8 billion in assets in South America alone, BankBoston today has one of the five largest networks of international offices of any U.S. bank, says Frank

Barkosy, an analyst at New York-based brokerage house Josephthal Lyon & Ross. In Latin America, BankBoston operates out of offices in Argentina, Brazil, Chile, Uruguay, Colombia, Panama, Peru and Mexico. Bank of Boston merged with another Boston financial institution, BayBanks Inc., on July 29, 1996, to become BankBoston. Latin American operations made up 21 percent of Bank of Boston's total income. Post-merger, the figure is still an impressive 12 percent. In July 1996, BankBoston tapped Henrique de C. Meirelles, the former head of Banco de Boston do Brasil, to become president of the entire company, the first time a major U.S.-based bank named a South American as its second in command. That's a strong signal that the bank intends to expand its Latin American business rapidly, Barkosy says.

—P. Fabris

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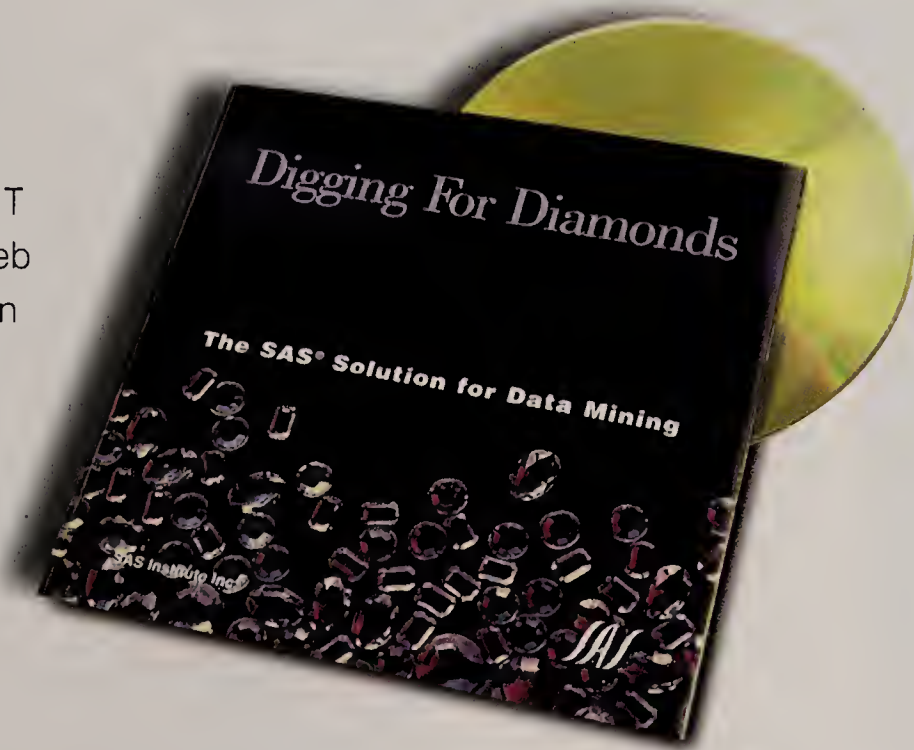
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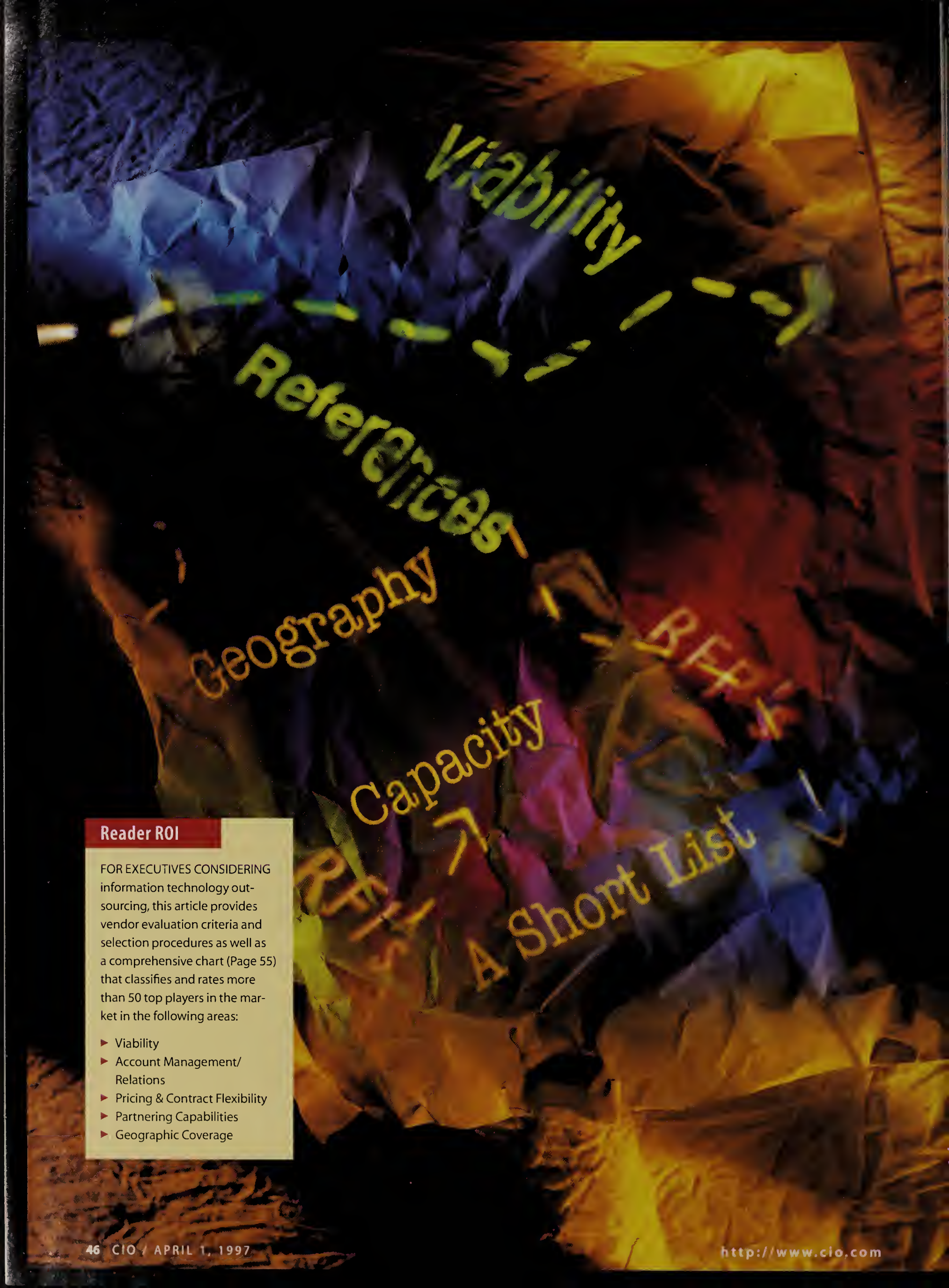
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Viability

References

Geography

Capacity

A Short List

Reader ROI

FOR EXECUTIVES CONSIDERING information technology outsourcing, this article provides vendor evaluation criteria and selection procedures as well as a comprehensive chart (Page 55) that classifies and rates more than 50 top players in the market in the following areas:

- ▶ Viability
- ▶ Account Management/Relations
- ▶ Pricing & Contract Flexibility
- ▶ Partnering Capabilities
- ▶ Geographic Coverage

An Outsourcing Buyers Guide

Caveat Emptor

Making the right choice requires a sound strategy for distinguishing and deciding among the bewildering array of vendors

BY TOM FIELD

So you've made the decision to outsource. Now what?

That is the quandary facing businesses large and small. For every company looking to outsource all or part of its information technology organization, there are dozens of potentially capable vendors. Suppliers can be top-tier, full-service giants; second-tier, specialized vendors; or smaller, sometimes regional operations. Making a smart choice among them requires a mirror and a microscope to determine what kind of business you want to become and which vendor has the capability, commitment and culture to help you reach that goal. Most of all, you need a process, a systematic approach of requesting bids, reviewing proposals, whittling down your long list, checking references and, finally, making the shrewd selection. And if you don't have the resources or energy to manage that process in-house, you'll probably need to consider bringing in an experienced outsourcing consultant (see "Leave the Shopping to Us?" Page 48).

"It's a voyage of discovery, no matter how much information you have," says John Lynch, director of global outsourcing management at Xerox Corp. in Rochester, N.Y. Xerox's 1994 deal with top-tier vendor Electronic Data Systems Corp. (EDS) was considered an industry benchmark, igniting a succession of

bigger, broader outsourcing pacts. "A lot of companies are racing toward outsourcing without fully understanding what it means," Lynch says. "Go carefully, and take time to understand exactly what outsourcing requires."

Know Thyself

Often the first decision you'll confront is the choice between full-service and selective outsourcers. The right answer is very much an organization-specific choice, says Michael Corbett, managing partner of Michael F. Corbett & Associates, a Poughkeepsie, N.Y.-based strategic outsourcing consultancy. Know why you are outsourcing and how much of a management role you want to assume, Corbett advises. If, like Xerox, you want to focus on core IT strategy while someone else worries about day-to-day operations, then maybe you want an EDS—a full-service systems integrator that will bring its own people and processes to your shop. But if, like Toledo, Ohio-based manufacturer Owens Corning, you aim to integrate a supplier within your own operation, then maybe you want a smaller, flexible vendor like Hewlett-Packard Co. Then again, perhaps the job is too big for a single outsourcer, and you wind



DuPont CIO **Cinda Hallman** chose two vendors with complementary strengths.



Warren Gallant: "You'll want to know what the vendor is bringing to the account—does it have the bench strength for the job?"

up like New York-based J.P. Morgan, managing multiple vendors—in this case, Computer Sciences Corp. (CSC), Andersen Consulting, AT&T Solutions and Bell Atlantic Network Integration—in a best-of-breed confederation.

There are other factors to weigh in the full-service/selective choice. What are your outsourcing priorities? If it's important that the vendor acquire the company's physical IT assets, then a full-service outsourcer is better positioned to help you. But if you're looking to beef up a specific function or technology, then selective outsourcing allows you to choose from the best of the best in that particular niche. Also, how important is the bottom line? Because of its size and economies of scale, a full-service vendor can offer a lower cost per transaction. However, if you opt for selective outsourcing, you'll find a more competitive vendor marketplace that may pay off in a greater service level and contract flexibility.

It's not necessarily an either-or proposition. DuPont, of Wilmington, Del., last year announced a 10-year, \$4 billion deal allying CSC and Andersen, two full-service vendors, in a best-of-breed relationship. "They bring different strengths at different points," says DuPont Vice President and CIO Cinda Hallman.

CSC, she says, has the edge in data center support, whereas Andersen's strength is in business processes.

Getting to the Short List

One place to start your outsourcing search is with your current list of IT suppliers. Is it a job for which they'd like to bid? Do they have the capacity? Most likely, you'll need to consider traditional outsourcing vendors as well. Send a request for information (RFI) to a mix of tier-one and tier-two players and gauge their interest in the job. The respondents constitute your long list. You then need to rely on due diligence to winnow down to a short list.

When DuPont began its outsourcing quest in early 1996, it hired Technology Partners Inc., a Houston-based outsourcing consultancy, to manage the selection process. To arrive at a long list, TPI translated the company's needs (new IT skills and variable costs) into an RFI that attracted serious interest from 20 vendors. TPI then set up interviews with the vendors and began checking whether they had the capabilities to meet DuPont's global needs, in which industries and technologies the vendors were investing resources, and how the vendors interacted with current clients. "At this point, you

want to know what the vendor is bringing to this particular account—does it have the bench strength for the job?" asks TPI Chief Operating Officer Warren Gallant. That process narrows the field considerably. In DuPont's case, TPI helped trim the 20 prospects to four, eliminating some because they couldn't handle the client's global infrastructure and others because they didn't have enough diverse business experience.

Another company that used interviews to prune its long list was American Re-Insurance Co. of Princeton, N.J., which

A Vendor on Judging Vendors

Thomas R. Madison Jr., group president of outsourcing vendor Computer Sciences Corp. in Falls Church, Va., has participated in approximately \$12 billion worth of outsourcing deals involving such companies as J.P. Morgan, DuPont and CNA Insurance. He recommends that outsourcing buyers investigate the following points about their prospective vendors:

- **How high is the vendor's level of interest in your outsourcing needs?**
- **Does the vendor show the flexibility to respond to business and technology changes?**
- **Is it committed to the outsourcing industry?**
- **Is it financially secure?**
- **How diverse are the vendor's employees' skills?**
- **What breadth of professional services does the vendor offer?**
- **Does it have relationships with other outsourcing suppliers?**
- **Is it willing to share risk?**
- **How good is the vendor's knowledge of your industry?**
- **Do existing customers trust the vendor?**

went shopping for a supplier of main-frame support services in 1996. Then-CIO Ken Kaczmarek identified 10 vendors with whom he wanted to speak; he heard each of their proposals, then sent eight of them an RFI and asked if he could visit them before any serious negotiations began. His goal was not just to

hear about vendors' capabilities; he wanted to see them—their computer centers, management teams and personnel with whom his own people might work. Even at that formative stage, several prospects washed out. Some said they couldn't meet American Re's financial or personnel terms—others plain wouldn't. And much was revealed by "the way they handled us," Kaczmarek says. One deserved also-ran was late for its meeting with American Re, proved unable to do the job without subcontracting and then wouldn't agree to take on any of American Re's employees. The ultimate winner, Systems Management Specialists, a Santa Ana, Calif.-based supplier, won the contract partly because of its presentation at the initial meeting—particularly its willingness to share references from its entire client list, a trait absent in several other vendors.

When it comes time to make your final selection, send a detailed request for proposal (RFP) to your short list of vendors—no fewer than two or three for compari-



Michael Radcliff, CIO of Owens Corning, believes in do-it-yourself vendor selection.

son's sake and probably no more than a half-dozen. The RFP spells out exactly what service levels and costs you're attempting to achieve as well as the expectations of what will happen to your current staff. When formal proposals come back, set up meetings with the actual vendor personnel who would be assigned to

Leave the Shopping to Us?

When it comes to selecting an outsourcer, some buyers prefer to do it themselves, whereas others opt to outsource the process

DUPONT TOOK JUST 11 MONTHS to visualize and execute what was at the time the industry's largest outsourcing deal—a 10-year, \$4 billion contract with Computer Sciences Corp. (CSC) and Andersen Consulting inked last year. DuPont retained an outside consultant, Houston-based Technology Partners Inc. (TPI), to round up and cull the vendors. "We would have been inventing a process if we'd done it in-house, and we didn't need to do that," says Cinda Hallman, vice president and CIO of Wilmington, Del.-based DuPont. Instead, Hallman relied on TPI's methodology of requests for information, requests for proposals, personal interviews and reference checking.

Finding a qualified consultant is not the problem—all of the major consulting firms have outsourcing practices, and specialized consultancies such as TPI and Technology & Business Integrators of Woodcliff Lake, N.J., have vast experience navigating the outsourcing thicket, as do noted attorneys such as John K. Halvey of New York's Milbank, Tweed, Hadley and McCloy. Rather, the issue is whether to invest internal resources in the process.

Some outsourcing shoppers prefer to keep the entire selection process in-house. When Owens Corning of Toledo, Ohio, approached outsourcing in 1994, one of the strategic issues on the table was how to invest its intellectual capital. "As we looked at the things we felt we needed to be good at, one of them was being a very good selector of partners," says Michael D. Radcliff, vice president and CIO. "We knew we eventually would do a lot of outsourcing, and we wanted consistency [in our approach]."

Still other companies, such as J.P. Morgan and GE Appliances, have opted for a mix, conducting the selection process themselves but bringing in consultants for contract negotiation. "Frankly, we haven't seen the value-add of using consultants in the selection process," says Greg Levinsky, CIO of GE Appliances in Louisville, Ky. "We know what we want ourselves."

Whether or not one chooses to use a consultant, TPI Chief Operating Officer Warren Gallant advises companies to make sure they have someone with outsourcing experience on the vendor selection team. Outsourcing deals can be extremely complex: "This may be a 10-year contract on everything you've got—with a lot of variables," Gallant says. "In 10 years, you'll probably go through three, maybe four, generations of technology and four different strategic plans. If you don't know what you're doing [with outsourcing], you need to get people on your side who do."

—T. Field

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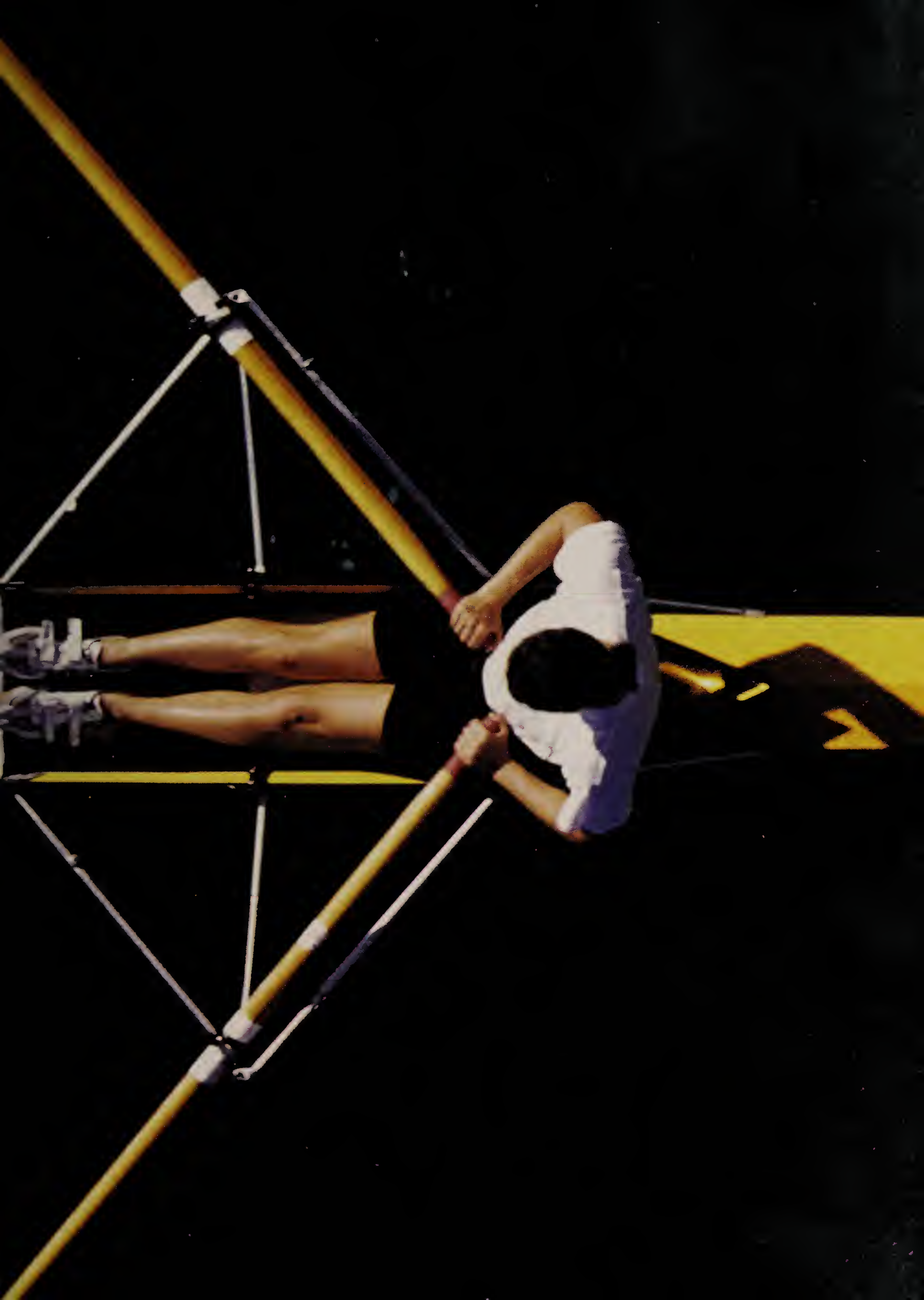
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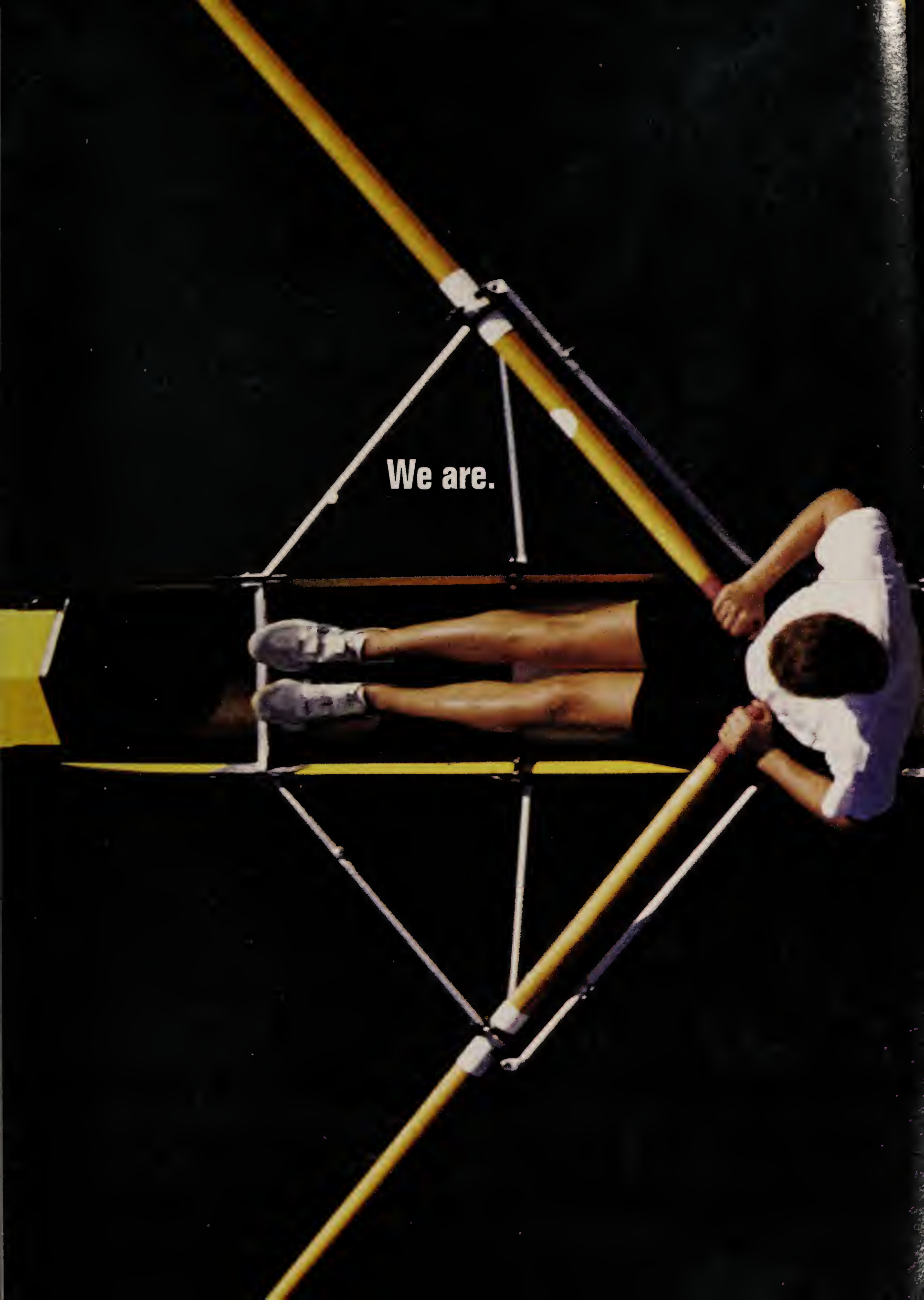
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The Outsourcing Buyers Guide

This guide rates information technology outsourcing vendors by quality and reputation based on Meta Group Inc.'s research of Global 2000 companies. Each category contains the major vendors making the greatest impact in that area. Scores are relative within each category. The first section contains broad-based vendors that compete across most categories; those vendors are listed only once. Other vendors that provide services in more than one technology area are listed in their areas of significant presence; in a few cases, that results in multiple listings. For more comprehensive evaluations, see Meta Group's Web site at www.metagroup.com.

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Electronic Data Systems Corp. (EDS), Plano, Texas	972 604-6000	www.eds.com	1	4	4	3	1
IBM Corp.'s Integrated Systems Solutions Corp. (ISSC), Somers, N.Y.	800 873-4772	www.issc.ibm.com	1	3	3	3	2
MCI Communications Corp.'s Systemhouse, Toronto	800 745-8870	www.shl.com	1	3	2	2	3
Perot Systems, Dallas	800 688-4333	www.perot.com	2	2	3	3	3
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CompuCom Systems Inc., Dallas	214 265-3600	www.compucom.com	3	3	3	4	3
Digital Equipment Corp., Shrewsbury, Mass.	508 841-3111	www.digital.com	3	2	3	2	2
Entex Information Services, Rye Brook, N.Y.	914 935-3600	www.entex-is.com	3	4	4	2	4
GE Capital Technology Management Services (TMS), Norcross, Ga.	770 246-6200	www.ge.com/capital/techmanage	1	2	2	3	4
Hewlett-Packard Co., Palo Alto, Calif.	800 752-0900	www.hp.com	1	1	3	3	1
Stream International Inc., Westwood, Mass.	617 751-1000	www.stream.com	3	3	2	1	4
Unisys Worldwide Information Services, Blue Bell, Pa.	215 986-3501	www.unisys.com	3	1	2	2	1
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Digital Equipment Corp., Shrewsbury, Mass.	508 841-3111	www.digital.com	3	2	2	1	1

Rating Criteria

Vendor Viability Financial condition, including parent company's stability

Account Management/Relations Relationship management capabilities and customers' view of the relationship

Pricing & Contract Flexibility Willingness to enter into nontraditional contracts and to accommodate specific customer needs

Partnering Capabilities Ability to partner at various levels, including megadeal alliances and project-specific partnerships

Geographical Coverage Coverage of the targeted geographical areas. A worldwide vendor with a high score indicates strong international presence and geographical alliances. A national vendor with a low score indicates limited, spotty coverage.

Additional Opinions

These are summaries of opinions and observations contributed by Michael F. Corbett & Associates in Poughkeepsie, N.Y.; William P. Martorelli, vice president of Giga

Geography
Capacity
A Short List

IBM Global Networking (Advantis), Armonk, N.Y.
 International Network Services (INS), Sunnyvale, Calif.
 NCR Corp., Dayton, Ohio
 NetSolve Inc., Austin, Texas
 Wang (I-Net), Bethesda, Md.

800 426-4968
 888 467-8100
 937 445-5000
 512 795-3000
 301 214-0900

Information Group in Cambridge, Mass.; and Gene Procknow, national director of technology outsourcing services for Deloitte & Touche Consulting Group in Boston.

Diversified, Multisegment Services EDS & ISSC are

DISASTER RECOVERY/BUSINESS RESUMPTION

Comdisco Inc., Rosemont, Ill.
 IBM Corp.'s Business Recovery Services (BRS), Sterling Forest, N.Y.
 SunGard Recovery Services, Wayne, Pa.
 Wang (I-Net), Bethesda, Md.

800 272-9792
 800 599-9950
 610 341-8700
 301 214-0900

clear global powerhouses. CSC of late has shown increasing initiative in entering more creative partnership deals. Perot doesn't have enough data center breadth to be truly full-service. MCI is not a major player but could become one with the British Telecom merger.

HARDWARE MAINTENANCE/FIELD SERVICES

Decision One, Frazer, Pa.
 Digital Equipment Corp., Shrewsbury, Mass.
 Memorex Telex Corp., Irving, Texas
 Unisys Worldwide Information Services, Blue Bell, Pa.
 Wang Laboratories Inc., Billerica, Mass.
 Xerox Corp., Stamford, Conn.

610 296-6000
 508 841-3111
 214 444-3500
 215 986-3501
 508 967-5000
 800 828-6396

LAN/Desktop Services GE Capital boasts great fiscal resources. Vanstar and Entex both emerged from the PC retail world to be leaders. Entex manages Microsoft's desktops—which says a lot about outsourcing and Entex.

Help Desk Keane has a strong background in computer programming and is a market leader.

Data Network Management IBM stands out because of its great fiscal and technical resources. I-Net is noted for its approach of working for a percentage of its customers' cost savings.

DATA CENTER

Affiliated Computer Services Inc. (ACS), Huntington Beach, Calif.
 First Data Corp., Hackensack, N.J.
 GE Capital Technology Management Services (TMS), Norcross, Ga.
 Litton Computer Services, Woodland Hills, Calif.
 Lockheed Martin Corp., Bethesda, Md.

714 842-7800
 201 525-4700
 770 246-6200
 800 527-8737
 800 255-7883

Disaster Recovery/Business Resumption Comdisco has a strong technical resource pool and is a clear leader in disaster recovery.

Hardware Maintenance/Field Services Decision One stands out, having won a lot of recent deals. Unisys is becoming a player.

SYSTEMS INTEGRATION/APPLICATION DEVELOPMENT

Andersen Consulting, Chicago
 Cambridge Technology Partners (CTP), Cambridge, Mass.
 Coopers & Lybrand, New York
 Deloitte & Touche LLP, Wilton, Conn.
 Price Waterhouse Open Systems Integration, Bethesda, Md.
 Science Applications International Corp. (SAIC), San Diego

312 507-6755
 617 374-9800
 212 259-1000
 203 761-3000
 301 897-5900
 619 546-6000

Data Center Nearly all the full-service vendors have a data center specialty, but this is the core strength of market leader ACS.

Systems Integration/Application Development Andersen is the biggest systems integrator and boasts considerable experience in client/server technology and business processes; however, it is not as deep in new technologies, such as enterprise resource planning.

APPLICATION MAINTENANCE

Computer Task Group, Buffalo, N.Y.
 Information Management Resources (IMR), Clearwater, Fla.
 Keane Inc., Boston
 Tata Consultancy Services (TCS), Dallas

716 882-8000
 813 797-7080
 617 241-9200
 972 484-6465

Application Maintenance Keane is a leader in the United States. Tata is the largest India-based applications vendor. Computer Task Group is a good integrator of talent and often helps staff ISSC outsourcing deals.

CARRIER/NETWORK SERVICES

AT&T Corp., New York
 MCI Communications Corp., Atlanta
 Sprint Communications Co. LP, Westwood, Kan.

212 387-5400
 800 825-9675
 800 829-0965

See CIO's newest Resource Center

(www.cio.com/forums/outsourcing) for an archive of 15 outsourcing articles and links to outsourcing information, consultants and vendors.

NA: Not Available

*Dramatic rating variance based on geographic location



Greg Levinsky finds credibility in vendors that say they can't do everything.

your account and focus on three issues: capabilities, culture and cost.

Are They Capable?

The first thing to determine is whether the vendors vying for your business are truly capable of handling it. Look for the following telltale clues that can make or break an outsourcer's chances:

- How much experience does the vendor have in your industry? Will you have to teach it the basics of your business, or can you leverage its industry-specific skills?
- Where is the outsourcer making its technology investments? If you're committed to custom development but the vendor is investing in packaged applications, then you likely are headed down divergent paths.
- How does the vendor treat its people? If you plan on turning over part of your staff to an outsourcer, you want to know what career paths and compensation it will offer. Ask about the retention rate of employees taken in from other outsourcing customers.
- Can the outsourcer absorb your capital investments? If you've spent a lot of money on systems and software, you want to know if the supplier can use at

least some of the equipment.

Greg Levinsky, CIO of GE Appliances in Louisville, Ky., pays attention to vendors that say they *can't* do something. In 1995, when the company was looking to outsource its network management and help desk, Levinsky encountered vendors that claimed to have all of the capabilities he sought, but the claims ultimately proved untrue. The two vendors that eventually won the contract, Hewlett-Packard and Vanstar Corp., not only demonstrated the ability to do the job, says Levinsky, but were upfront about what they couldn't do. "They would not overcommit," he says. "[That showed] a lot of credibility."

Another way to judge a vendor's capability is by checking references—and not just those the vendor provides. "There's almost an underground network of CIOs who are willing to talk about their outsourcing suppliers," says John K. Halvey, who specializes in outsourcing as a partner at New York-based law firm Milbank, Tweed, Hadley and McCloy. "This is one area where clients have gotten much more sophisticated." Find current references in your industry and make sure they are mature accounts, not honeymooners, so that you can find out how responsive the outsourcer has been to changes and conflicts in the relationship. Ask open-ended questions that get at the core issues: How has the vendor delivered on its promises? How have your people fared in the new environment? Now that you've gone through the outsourcing process once, what would you do differently? If you can get references from former customers, find out how the outsourcer behaved when it came time to end the relationship.

Does the Culture Fit?

As you interview vendors and check references, you'll start to get a feel for one of the most important, albeit squishy, aspects of successful outsourcing: culture fit. Granted, that area is much akin to the U.S. Supreme Court's definition of obscenity—people can't necessarily define "culture fit," but

they know it when they see it. Yet there are a handful of factors you can compare:

- **Style:** Is your shop a Dockers-and-loafers office and your vendor a shirt-and-tie operation? That shouldn't be a deal breaker, but make it a consideration.
- **Management:** Does the vendor manage its outsourcing teams remotely, or does it keep its management staff on-site? Communication is vital in an outsourcing relationship, and it can make a big difference if vendor managers are easily accessible.
- **Problem solving:** How do your potential outsourcers handle conflicts that arise in the negotiation process? The way you interact at the negotiation table may foreshadow actual relationship dynamics.

When J.P. Morgan went through its selection process, Peter Miller, head of corporate technology, found his "culture fit" litmus test was to sit down with vendors and define the scope of the work. "When you get into this discussion, you'll find areas people will fight over," Miller says. "Watch how they fight." If they argue for solutions to benefit all parties, that's a good sign; if they are aggressively territorial, look out. When Miller's team discussed shared operation princi-



Attorney **John Halvey** advises clients to check references that are not supplied by the vendors.

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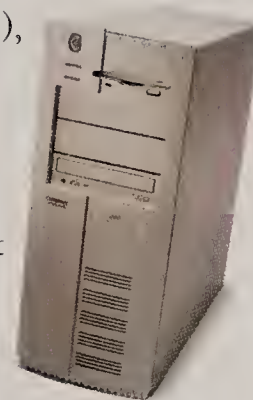
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Ken Kaczmarek visited prospective vendors to check out management teams and personnel.

ples with the vendors that eventually won the contract, partisan interests were put aside, and the greater dynamic of the relationship took over. "Everybody stepped out of their home base and really got into the spirit," Miller says.

In this era of multivendor alliances, another cultural determinant is how well the outsourcers work together. That was a concern for Citibank Corp., which last year outsourced half of its global desktop and local area network systems to Digital Equipment Corp. and EDS, two top-tier vendors accustomed to flying solo. Citibank insisted on the partnership: "We didn't want to be held hostage by a single vendor at renegotiation time," says Ranjit Singh, vice president of global distributed computing and LANs. Yet the bank still had reservations over how well the two competitors would cooperate. As it turned out, Digital and EDS used a lot of the same tools and processes, and they were willing to share with each other. "Their attitude has been, 'We are competitors, and we are going to compete, but it's going to be for quality of service,'" Singh says.

What'll This Cost Us?

And then there's the bottom line. Cost generally is the last factor all parties want to stress in an outsourcing relationship, but ultimately it is the only one that is quantifiable. Three areas to focus on are price vari-

ability, flexibility and shared risk.

Variability is what you want in a pricing structure. Rather than the fixed costs of maintaining current investments in, say, legacy systems and staff, you want a sliding, pay-as-you-go structure. But also look for built-in flexibility so that when

your IT environment changes, your vendor can accommodate the change with minimal fuss or restructuring of costs.

Beware the low-ball bid. The low price today is not always the best value tomorrow. When you look at a vendor's projected costs, watch out for hidden costs—for services that aren't covered in the contract—and consider how they'll escalate during the life of the agreement. In actuality, there is often a world of difference between a vendor's quoted price and the ultimate bill, warns Patrick McBride, vice president and director of services and systems management strategies for Meta Group Inc., a Stamford, Conn.-based consultancy. If you're offered a 25 percent reduction in data center costs, that figure may not include additional markups for overhead expenses or profit margin.

As for shared risk, outsourcing vendors are in the primary business of selling IT services, McBride says, and there is a far bigger "P" in "profit" than in "partnership." The true test of partnership is whether outsourcers are willing to share their customers' business objectives and risks in a so-called "co-sourcing" arrangement. A good example is Rolls-Royce Industrial Power Group's recently announced deal with EDS, in which EDS's ultimate compensation is contingent upon helping Rolls-Royce achieve new strategic business objectives involving materials management, project management and product development.

The good news about cost, says TPI's Gallant, is that your final couple of prospects will be pretty similar in their pricing. That will free you to focus on "softer" aspects of the deal, such as culture fit. When you tally up those points, it won't be hard to spot the winner. "I've not had any transactions where it was not pretty much unanimous who the finalists would be," Gallant says. "Pricing is a huge issue upfront, but it goes away. Ultimately, it's a comfort factor. It comes down to who's got the right capabilities, and who you are most comfortable with." **CIO**

Staff Writer Tom Field can be reached at tfield@cio.com.

Five Questions to Ask Yourself Before You Outsource:

1 What are your core competencies?

2 How does your IT organization help enable corporate strategy?

3 What IT skill sets will you need in the future?

4 Can a vendor provide your current service levels at a lower or variable cost?

5 Does upper management support your outsourcing decision?

Five Questions to Ask Vendor References:

1 How did you choose the vendor?

2 How has the outsourcing relationship helped achieve your business goals?

3 In what ways has the vendor met and not met its commitments?

4 What value proposition did the vendor sell you versus what it ultimately delivered?

5 How has the vendor handled change and conflict?



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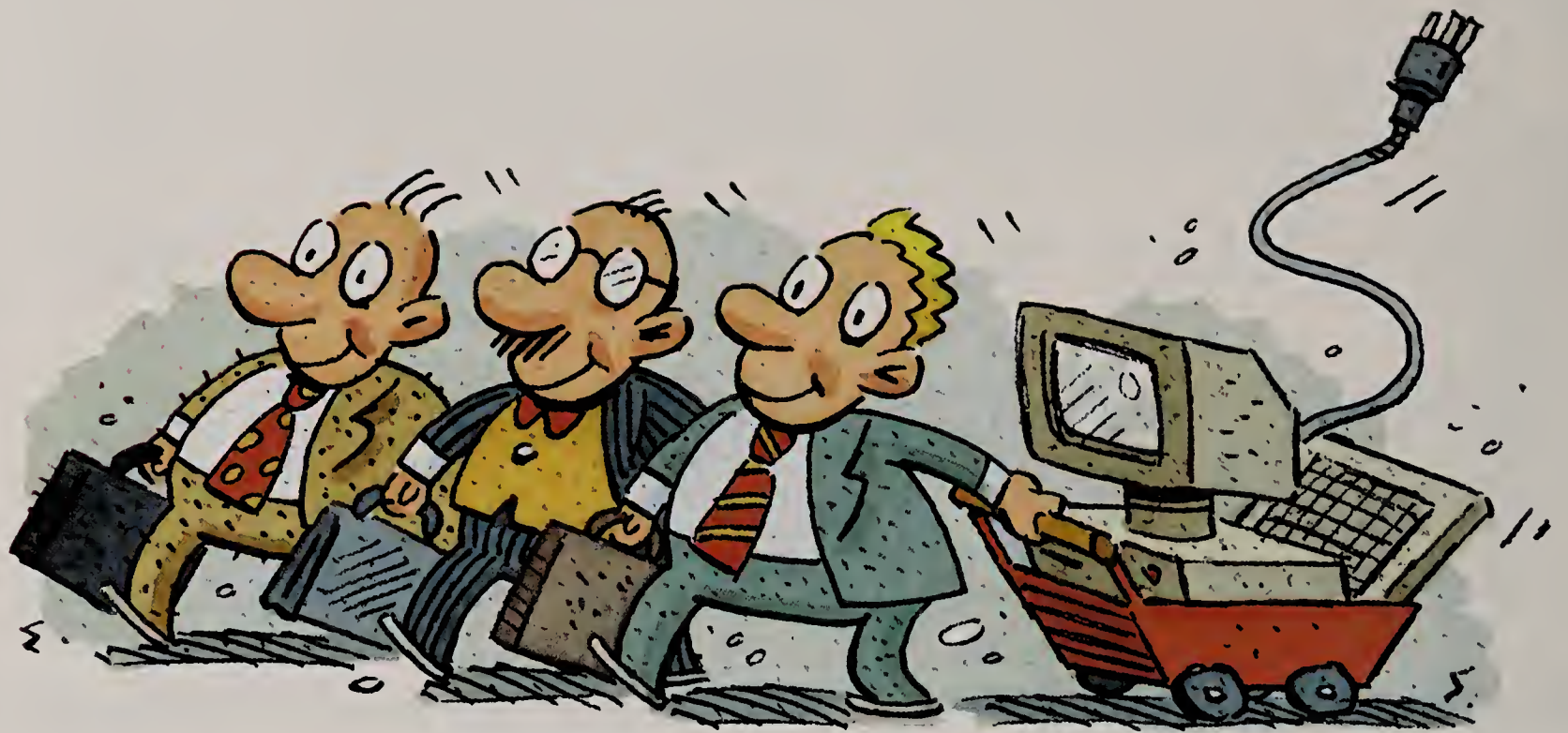


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Taking Care of Business

BY HEATH ROW

The eighth annual CIO/Ernst & Young survey reveals that IS and business goals are becoming more closely aligned. And now that more business executives are recognizing the strategic importance of technology, the opportunity to capitalize on IT has never been greater. But delivering basic IT functionality remains a prerequisite for a CIO's success.

ILLUSTRATIONS BY ELWOOD SMITH



FINALLY, IT'S STARTING TO HAPPEN: IS and business goals are converging. CIOs and business executives are both looking at IT not just as a cost center but as a strategic tool, and IS leaders are increasingly accepted as business partners by their bosses and peers. Yet even as CIOs take on a more strategic role in the business, they must continue to worry about delivering basic IT functionality.

The observation that CIOs and business executives are more in step with each other emerged from our eighth annual executive survey, co-sponsored by Ernst & Young LLP. The survey polled 230 CIOs and their bosses and peers in a range of industries and corporations to gauge how they view the CIO's role and function, perceive IS's place in the organization and weigh the importance of IT as a corporate investment. "The watchword for IS managers over the last few years has been 'alignment,' and that has been achieved in some

The Big To-Do List

Actions of a CIO that will add the greatest value to the business in the future as ranked by CIOs, bosses and peers

	CIOs	BOSSES	PEERS
Align IS and corporate goals	1	1	1
Add value by leveraging IT	2	2 (tie)	5
Enable change and nimbleness	3	5	3 (tie)
Organize and utilize data	4	•	•
Cut costs and improve operational efficiency	5	2 (tie)	3 (tie)
Improve the systems development process	•	4	•
Update obsolete systems	•	•	2



Conclusion: It's good news that all three groups view aligning IS and corporate goals as the CIO's top priority. But it's even more encouraging that bosses think adding value by leveraging IT is just as important as cutting costs.



sense," says Ronald J. Tarro, director of Ernst & Young's Vienna, Va.-based Navigating the New Technology Landscape program, which analyzes technology, management and strategy. "In the CIO role, there are more business people, which brings with it an inherent alignment."

Another possible reason CIOs and their bosses are more in agreement than they've been in the past is the increasing use of computers by executives. As more executives use PCs—almost 40 percent of managers responding this year said they use a computer constantly, but not one manager responding last year did—their understanding of IT and its potential business uses

increases, says Dean Wolf, principal of Ernst & Young's Center for Technology Enablement in Vienna, Va. "In the old days, there was that unusual priesthood who knew things about computers," he says. "Now, everybody has a computer on his or her desk. Everybody has to know it."

As IT loses its mystery and CIOs understand their businesses better, bosses and peers are coming to view CIOs more as strategic business partners. "What they are saying now is, 'We're no longer going to look

"CIOs were seen as plant managers in a transaction factory. Now CIOs are part of the company."

—Dean Wolf

at IS as those guys who are off in that other business and don't really need to know how we do business,'" Wolf says.

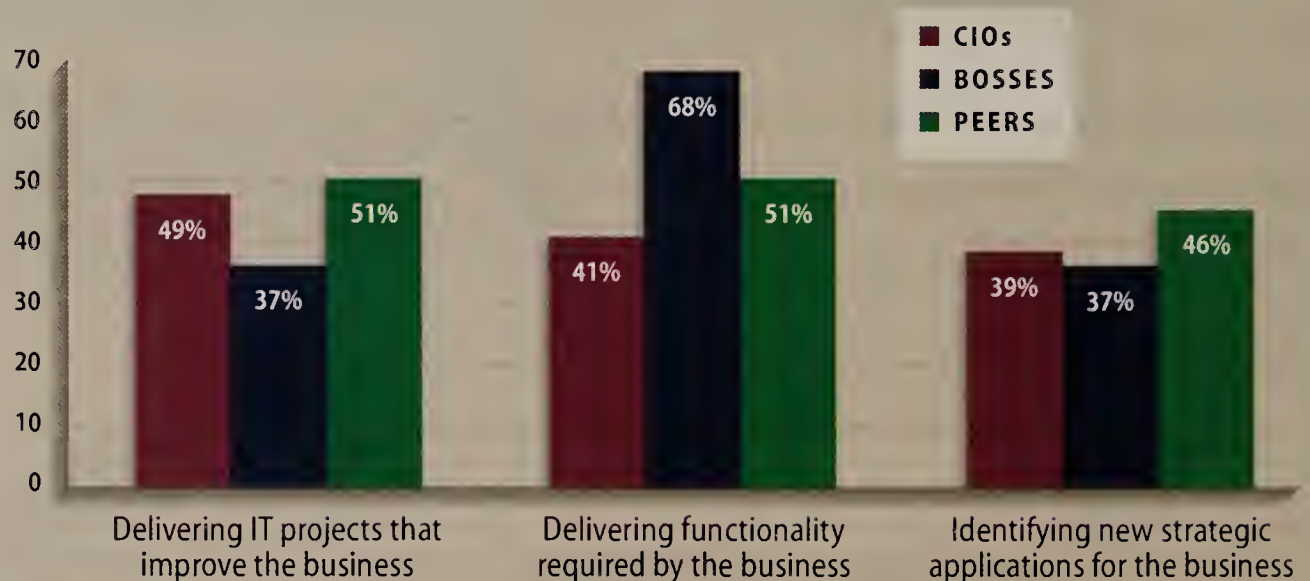
One sure sign that CIOs and their managers and peers are closer to defining the CIO function in the same way is that all three groups agree that aligning IT and corporate goals was the CIO's most important role in the past year. What's more, all three concur that overseeing such alignment will continue to be the most important function that will add the greatest value to the business in the future (see "The Big To-Do List," Page 63). That consensus of opinion on the CIO's top priority is especially important given that CIOs and their bosses and peers say the second-most important task—creating the IT architecture—becomes even less important when looking to the future.

The shift away from the role of infrastructure builder is the most apparent change in the CIO role and functions, Wolf says. CIOs already have established standards, equipped users and influenced users' IT-related decision making, and now



Do You Fear What They Fear?

The three biggest concerns about IS—and the likelihood that CIOs, bosses and peers worry about them (multiple responses allowed)



Conclusion: CIOs, bosses and peers share the same top three concerns about IS. But bosses and peers are much more likely to worry about delivering IT functionality than CIOs are.



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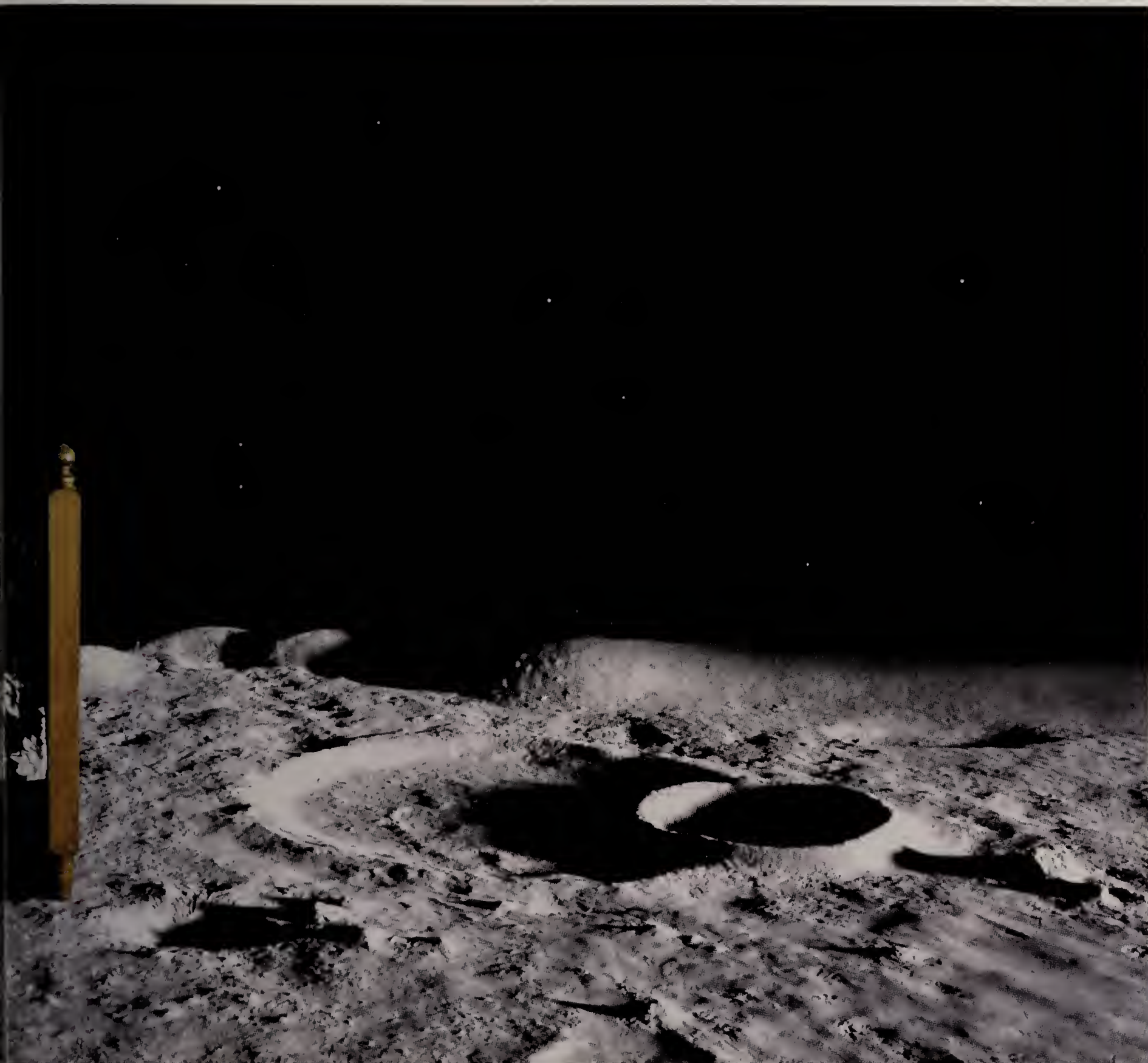
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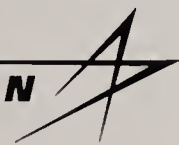
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their bosses and peers expect them to play a bigger role in business decisions and to optimize their enterprises' systems by aligning IT and corporate goals. "This is a departure from what I've seen in the past," says Wolf. "CIOs were seen as plant managers in a transaction factory. Now CIOs are part of the company."

Along with the general shift away from architecture creation, the survey also shows that in the future, CIOs and their bosses and peers will focus on adding value by leveraging IT in addition to considering costs. In last year's survey, CIOs' bosses ranked controlling the costs of technology as the second-most critical success factor for CIOs over the next five to 10 years, and CIOs and their peers pegged it at number three. In this year's survey, adding value by leveraging IT tied with cutting costs for the number-two future priority in bosses' minds. Although just 29 percent of managers said adding value by leveraging IT was important in the past year, 47 percent said it will be important in the future. The fact that managing the cost of IT ranked this year as only the number-seven concern for CIOs, number eight for peers and number nine for bosses is more evidence that cost may no longer be the sole driving factor in IT decisions. "In the past, if companies didn't

The Five Best Ways to Lose Your Job

Things most likely to get the CIO fired, as ranked by CIOs, bosses and peers

	CIOs	BOSSES	PEERS
Failing to communicate with senior management	1	1 (tie)	1
Not fitting in with corporate culture	2	4	5
Failing to deliver functionality required by the business	3	1 (tie)	2
Not being a team player	4	3	4
Failing to manage the cost of IT	5	5	•
Delivering an IT project that fails and negatively affects the business	•	•	3



Conclusion: All three groups agree that failure to communicate with senior management is hazardous to a CIO's health. But IS executives should take note that failure to deliver basic IT functionality is just as likely to incur the boss's wrath.

think they were getting value from IT, they cut costs," Tarro says. "Now people are saying, 'We've cut costs; let's see if we can maximize value for what we're spending.'" (See "Take-Out Value," Page 70.)

This year, all three groups also agreed on the top three concerns for IS: delivering required functionality, delivering IT projects that improve the business and identifying new strategic applications for the business (see "Do You Fear What They Fear?" Page 64). However, differences in how the CIOs, peers and bosses ranked those concerns are telling. While CIOs said improving the business is the chief concern, their bosses and peers said they worry most about delivering functionality—and they're a good deal more likely to worry about it than are CIOs. About 40 percent of CIOs surveyed said delivering functionality is a concern, but half of their peers and almost 70 percent of their managers listed it as a concern. In fact, when asked which actions or lack of actions increase the odds of a CIO's termination, bosses and peers said that failure to deliver functionality required by the business is one of the prime reasons that CIOs get fired (see "The Five Best Ways to Lose Your Job," this page). Similarly, peers said delivering an IT project that fails and negatively affects the business



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could get CIOs the boot. Even though CIOs realize that—almost 50 percent of CIO respondents said failing to deliver functionality is grounds for removal—CIOs are generally less concerned about functionality than are their managers and peers.

That discrepancy might reflect the fear of CIOs' peers that as CIOs become more involved in business strategy and higher-level work, they will neglect the day-to-day grunt work needed to ensure that IS runs smoothly, Wolf says. "In general, CIOs have aligned the goals of IS with [those of the] business," he says. "But alignment doesn't

matter if [the basics are] not delivered. The peers are worried that IS and CIOs don't have the block and tackle that they need."

Differences in opinion among CIOs, bosses and peers over CIOs' communications skills are also illuminating. Although CIOs may think they're doing a good job of showing their bosses and peers what IS is doing for the business, the message might not be getting through. About 70 percent of CIOs said they value their IS organizations' understanding of customer needs more than anything else, but only half of the managers and

Take-Out Value

The primary motivation for outsourcing may no longer be cutting costs. Today, a growing number of companies are looking outward to gain needed competencies.

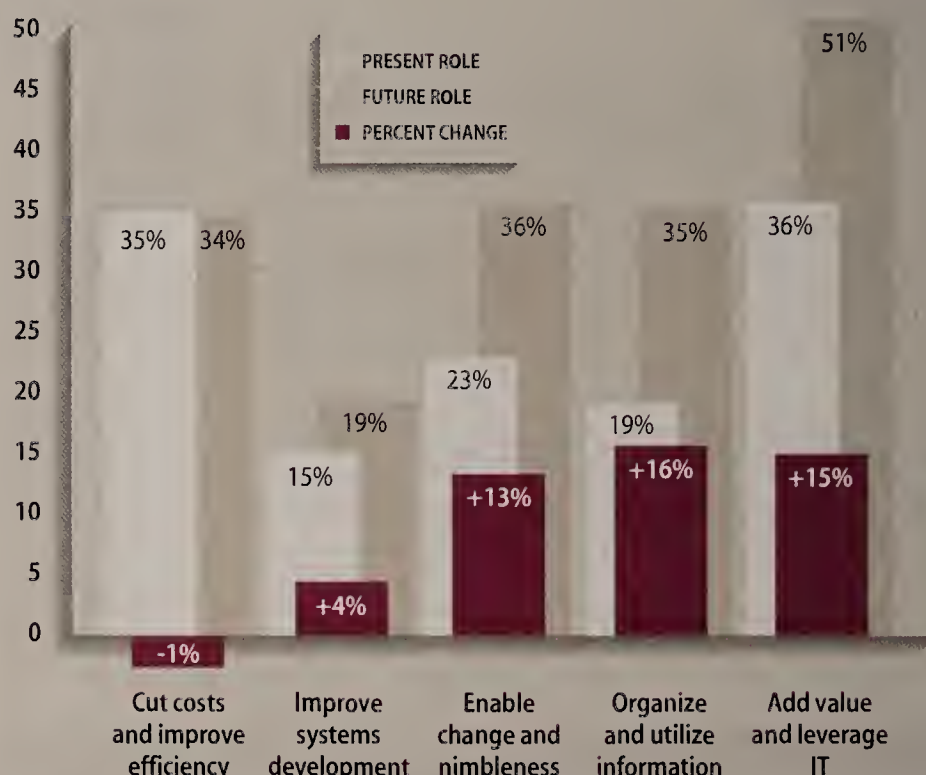
THE INFORMATION SYSTEMS WORLD has long debated the wisdom of outsourcing. But until now, that debate primarily has focused on balancing financial objectives against the organizational risk of establishing partnerships. Data from this year's CIO/Ernst & Young survey, however, suggests that cost may no longer be the sole driver of outsourcing decisions. CIOs increasingly are seeking improved organizational performance through outside partners.

That emerging rationale for outsourcing is sensible when viewed from a technology value-creation perspective. The 1996 survey indicates a general shift in IS management attention away from cost and toward value creation (see chart). But consider for a moment what it takes to create value from technology. Creating value requires that an organization both master technologies and successfully apply them to some particular purpose.

The pursuit of value introduces a fundamental IS management problem: Can IS organizations be world-class at extracting value from all possible technologies? There are more technologies than an IS organization can reasonably master, and there are an infinite number of potentially unique applications for those technologies. Equally challenging is the velocity of technological change. Even given an IS organization capable of managing the entire technol-

The Shift Toward Value Creation

Changes in CIO priorities, comparing the present and future importance of functions



Conclusion: The differences in present and future priorities of the CIO suggest that emphasis on operational optimization will decrease and emphasis on value creation will increase.

ogy landscape, how does that organization accommodate the reality that technologies change before they are fully or broadly mastered?

CIOs face a choice. The range of enterprise technological alternatives can be narrowed, the rate of technology adoption can be slowed or IS organizations can learn to learn new capabilities faster. But increasingly, the CIOs taking part in our survey are delivering value through the selective acquisition of outside services.

—Ronald J. Tarro, director of Ernst & Young's Navigating the New Technology Landscape program

APPLICATION FORM



The 1998 CIO Enterprise Value Awards

*Honoring Business Achievement Through The
Innovative Use of Information Technology*

APPLICATION DEADLINE: JULY 1, 1997

Presented By:
CIO Communications, Inc.



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The 1998 Enterprise Value AwardsSM

CRITERIA

A panel of independent judges will choose winners from among entrants who have submitted completed application forms to *CIO* by July 1, 1997.

Entries will be judged on the following criteria:

- The extent to which the system adds business value in furthering the organization's strategic or operational objectives
- The measurable financial return the system provides to the organization
- The extent to which IT was key in achieving the overall business solution—the "couldn't have done it without technology" factor
- The quality of collaboration between the business unit and IS organization that is achieved throughout the course of the project

Each finalist will be subject to an in-depth analysis of the nominated system (to be performed by *CIO* or its agents). That analysis, which may require a site visit, will be based on interviews with sponsoring executives and system users and will be designed to substantiate all claimed benefits. Notification of winners will occur in October 1997. *CIO* reserves the right to publish relevant cost and savings figures that establish the claimed ROI of the system; the willingness to divulge that information for publication is a condition of entry.

DEFINING VALUE

We invite applicants to consider the broadest possible spectrum of enterprise value. The following list of IT-enabled benefits is intended to help guide applicants' thinking:

- new, innovative and more productive ways of doing business
- revamped organizational structures or styles of performing the work of the enterprise
- the ability of the enterprise to enter a new market
- successful global operation or expansion
- transformation of the way the enterprise competes within its customary market or of the terms of competition within the market

- improvement of the enterprise's relationships with its external customers
- improvement of the enterprise's relationships with its own employees or among its functions (such as marketing, finance or human resources)
- the ability of the enterprise to compete more effectively by adding to the sum of its available knowledge assets
- leaner and more economical operations

ENTRY GUIDELINES

- The system must have been operational prior to July 1, 1995.
- Entrants must agree to be featured, along with their systems and organizations, in a *CIO* article.
- Entries must be complete.
- The application form may be reproduced.
- Multiple entries from one company will be considered, but each entry must be submitted separately.
- Entries must be made jointly by the IS executive *and* the business sponsor for whom the system delivers value.
- IT vendors, public relations and advertising companies, consultants and other third parties may *not* apply on behalf of another company. They are encouraged to forward this form to the "owner" of the system or to contact *CIO* Communications to recommend that an application form be sent to the client.
- All entries must be computer-generated or typed; no handwritten entries will be accepted.
- Entries must be on 8.5-by-11-inch paper, one side per sheet.
- When feasible, an additional copy of the entry should be sent on a 3.5-inch disk. Electronic entries must be limited to word-processing and spreadsheet packages that are compatible with Microsoft Word and Microsoft Excel on a Windows or Macintosh platform.
- To view a complete sample application, or for more information on the Enterprise Value Awards, please visit our Web site at <http://www.cio.com/forums/EVA.html>.

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THE VALUE OF IT. IT'S REAL. You know it, and you've proved it. Your organization is actually realizing business value and hard-dollar benefits from IT investments. And although the payback is its own reward, the *CIO* Enterprise Value Award will bring you, your company and your IT organization the industry recognition you all deserve!



POSITIONING IT AS A BUSINESS ASSET

Yet the *CIO* Enterprise Value Award goes beyond recognition. It is an opportunity to provide hard, tangible facts about business value and ROI from information technology to the business community at large. It is an opportunity to demonstrate how partnering between business and technology executives can lead to the attainment of strategic objectives. By communicating the payback, *CIO* hopes to encourage other businesses to invest wisely in IT to ensure their survival in a fiercely competitive global market.

DO YOU QUALIFY FOR AN ENTERPRISE VALUE AWARD?

Four criteria are essential.

1. A return of value to the enterprise
2. A measurable financial return attributable to the system
3. The pervasiveness of information technology — in other words, the strategic objective could not have been met without IT's contribution
4. A collaboration between an IT and business executive

IF YOUR INNOVATIVE SOLUTION meets the criteria, please complete this Enterprise Value Awards application form. The Feb. 1, 1998, issue of *CIO* will feature profiles of the winning organizations and the executives who have proved that their technology investments have had a positive and sustained impact on enterprise value.

IN FEBRUARY 1998, *CIO* will host a special awards ceremony honoring the Enterprise Value Award winners at the annual *CIO* Enterprise Value Retreat. For more information, please contact Lisa Kerber at (508) 935-4449.

CIO ENTERPRISE VALUE AWARDS TIMELINE

APPLICATION DUE: July 1, 1997

JUDGES SELECT WINNERS: October 1997

WINNERS ANNOUNCED: October 1997

AWARDS CEREMONY: February 1998
at the *CIO* Enterprise Value Retreat
Ritz-Carlton, Laguna Niguel, Calif.

*1996 winners from
United HealthCare Corp.*



1. COMPANY/BUSINESS UNIT

name of parent company

city, state where headquarters are located

publicly or privately held?

annual revenues

industry

name of business unit or organization

city, state where located

number of employees at business unit

URL

2. ENTRANTS

A. name of entering IS executive / system sponsor

title

name of division, department or unit

address

city

state zip

telephone fax

e-mail

B. name of entering business-unit executive / sponsor

title

name of division, department or unit

address

city

state zip

telephone fax

e-mail

3. SUPPORTERS

Please list four people who are willing to be interviewed with regard to the system, its development, its use and the value returned. At least one should be a member of the technology team that developed the system and should have played a significant role. At least one should be a primary user from the sponsoring business unit. The other two may be from either organization or represent suppliers, customers or others intimately familiar with the system.

A. name

title

telephone fax

e-mail

reason for inclusion

B. name

title

telephone fax

e-mail

reason for inclusion

C. name

title

telephone fax

e-mail

reason for inclusion

D. name

title

telephone fax

e-mail

reason for inclusion

DEADLINE: JULY 1, 1997

Mail to: Enterprise Value Awards • CIO Communications, Inc.
492 Old Connecticut Path • P.O. Box 9208 • Framingham, MA 01701-9208

4. THE NOMINATED ORGANIZATION

Please tell us about your organization (*company, business unit, agency*) in 500 words or less. Include information on:

- when the organization was founded
- mission statement
- major products and services
- markets served
- your organization's standing within its industry
- any other data you believe to be relevant in terms of general background

5. THE NOMINATED SYSTEM

Tell us about the nominated system and demonstrate its importance to your organization by completing the following sections. Please limit your material to one page.

System Description: In one sentence or less, describe the system or IT initiative you are nominating (e.g., order-entry or document-management system; switch to a client/server architecture; global network implementation).

Technical Profile: Briefly describe the technology of the nominated system. Please include the names of major vendors and products. (NOTE: The examples provided here are meant to be illustrative, not all-inclusive.)

- Architecture (e.g., *client/server, mainframe*)
- Hardware (e.g., *mainframe/parallel processor, mini-computer/server, PCs, handheld devices*)
- Software (e.g., *operating systems, database system, application software*)
- Software development tools (e.g., *CASE, 4GLs, GUI developers, object-oriented development tools*)
- Network/communications hardware, software and services (e.g., *modems, routers, e-mail packages, carriers and public networks*)

6. BUSINESS IMPACT

Describe the primary business objectives of and value delivered by the IT investment. Please limit this section to three pages.

Statement of Value: List the three most important contributions the system has made to the business (please refer to "Defining Value" section on the first page of the application form).

Business Value Description: In detail, describe how the system delivers the value identified above (please include supporting data). Also describe any added value delivered, whether intentionally sought or serendipitously encountered.

Scope and Impact: Identify the functions (e.g., customer service, manufacturing, planning) that were changed by the system, the nature of those changes and their impact on the business. Also indicate the system's uniqueness compared with solutions being deployed by other companies within your industry.

The Importance of IT: Identify the different components of the overall business change (e.g., business reengineering, downsizing, cycle times). Explain the importance of the IT component to the overall business change. Could the results have been achieved without IT?

Collaboration: Describe how the business unit and IS organization worked together throughout the project, from conceptualization to implementation. What were the specific tasks fulfilled by the business unit? The IS organization?

7. QUANTIFYING ROI

Provide a detailed, one-page summary of the nominated system's investment costs (including all upfront development expenses and annual maintenance charges). Also provide estimates of returns (including increased profits, reduced costs and indirect cost-avoidance). Estimates of costs and returns should be made per annum over a five-year period. This data is required to make it past the first round of judging. If your company is selected as a finalist, you will be required at that time to fill out a standardized table detailing specific costs and returns.

8. TRUTH OF INFORMATION/RELEASE

The following release must be signed by both nominating executives if the application is to be considered.

Unsigned releases will invalidate the entry.

I hereby state that the information provided is true and complete to the best of my knowledge and belief.

I authorize the release and use of, in connection with the Enterprise Value Awards program, any and all materials furnished by me or others at the company contacted for this judging. I understand that information submitted on this application or subsequently gathered during the evaluation and judging process may be used in articles or any other type of publicity relating to the Enterprise Value Awards program.

I also authorize the release and use of my name, my company's name and my likeness, including but not limited to any photographs and any recording of my voice or image that may be taken of me for CIO Magazine. I agree that no compensation shall be due me or my company for such usage.

I recognize that failure to meet these conditions or to provide sufficient material that can be published can cause the application to be rejected at any point in the process at the sole discretion of the sponsors.

1. _____ date _____
signature of nominating IS executive

2. _____ date _____
signature of nominating business executive

9. OTHER EDITORIAL OPPORTUNITIES

If you are not selected as an award recipient, are you willing to be contacted for inclusion in other articles in CIO Magazine?

☐ Yes ☐ No

How did you learn about the Enterprise Value Awards program?

- ☐ CIO Magazine ☐ Academician ☐ cio.com Web site
☐ Consultant ☐ IS staff member ☐ PR Agency
☐ Systems Integrator ☐ Other publications ☐ Other
☐ Vendor ☐ Advertising Agency (please identify)

CHECKLIST

Have you filled out...?

- ☐ Company/Business-Unit, Entrants and Supporters Information

Have you included on separate pages...?

- ☐ Nominated Organization
☐ Nominated System
☐ Business Impact
☐ Quantifying ROI

Have both entrants signed and dated...?

- ☐ Truth of Information/Release

Have you checked off...?

- ☐ Other Editorial Opportunities
☐ How you learned about the Enterprise Value Awards program?

CONGRATULATIONS TO THE 1997 WINNERS OF THE ENTERPRISE VALUE AWARDS

Bell Atlantic Corp.

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*Vice President—Information Systems
Business Systems*

BRUCE S. GORDON

*Group President
Consumer & Small Business Services*

The Chase Manhattan Corp.

DENIS O'LEARY

Executive Vice President & CIO

FRANK LOURENSO

*Executive Vice President
Middle Market Banking Group (MMBG)*

Fidelity Investments

ALBERT AIELLO

CIO

President, Fidelity Investments Systems Co.

STEVE AKIN

President

Fidelity Retail Customer Services

MacGregor Medical Association

JIM SLOANE

Director of Information Technology

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The sharpest minds in the computer industry today go head-to-head in a raucous game of ultimate computer trivia. The 1997 Computer Bowl, with celebrity host Robert Urich, April 18th at the Santa Clara (CA) Convention Center and The Computer Museum, Boston. All proceeds benefit The Computer Museum's educational programs.

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The Computer Bowl contest is taped for broadcast as a special edition of PBS' "Computer Chronicles," airing the week of June 3rd. Check your local PBS listings.

less than a third of the peers said they thought that CIOs value user needs. Even though CIOs are trying to play the role of business partner and great communicator, they might unwittingly be perpetuating the perception that they aren't in touch with their users. "IS considers itself to be the business of IS. 'We' and 'they' seem to permeate the language," Tarro says. "You have this idea of separatism on the one hand and then the feeling that we have to get aligned."

Not only must CIOs make sure they stay in tune with business requirements and deliver the basics, they need to work harder to communicate to peers and bosses that basic needs are being—and will continue to be—met. Their jobs may, in fact, depend on it. CIOs and peers said failure to communicate with senior management is the number-one reason a CIO might get fired, and for bosses, it tied with failing to deliver functionality required by the business as the top reason. That marks an interesting shift from last year's survey, in which peers and bosses didn't rate communication skills as important for IS executives and primarily wanted their CIOs to play supporting, service-provider roles.

One way CIOs can improve communication and alignment of business and IS goals is by attending executive meetings. Of the 63 percent of CIOs who said they attend at least half of the executive meetings held in their companies, almost 60 percent said they're involved in select strategic business decisions; only a quarter of those CIOs who never attend executive meetings said they participate in setting select business strategies.

But merely attending meetings does not guarantee participation in making strategic business decisions or the success of IT investment, Tarro says. A meeting can be a proxy for decision making that goes on behind the scenes, and being invited to the executive table could be either a sign that CIOs have voting power and access to their higher-ups or evidence that the CEO doesn't trust them. "There's no value to [CIOs] being in the meeting; there's value in them having a point of view," he says. "If you're a geek and you go into a meeting with senior management and speak

"If you're a geek and you go into a meeting with senior management and speak another language, it's just another way to make yourself irrelevant."

—Ronald Tarro

another language, it's just another way to make yourself irrelevant."

Rather than think of executive meetings as forums merely to advocate technology, CIOs should use them as venues to present new ways that IT can contribute to the business strategy in order to lay a technology foundation that supports it, Tarro says. CIOs should use meetings to form organizational partnerships, integrate working groups and connect organizations through projects. "If you are working to establish the impact of technology on the business, that's a better thing [than solely advocating technology]," he says.

CIOs can also address bosses' and peers' concerns with performance head-on by installing flexible systems, says Ken Norland, a research and development partner in Ernst & Young's Center for Technology Enablement. "CIOs seem petrified by the amount of change they're being asked to deal with," Norland says. "There's a little too much of a 'keep on keeping on' mentality. There's not an adaptation on the part of CIOs to the decreasing cycle time and need for flexibility."

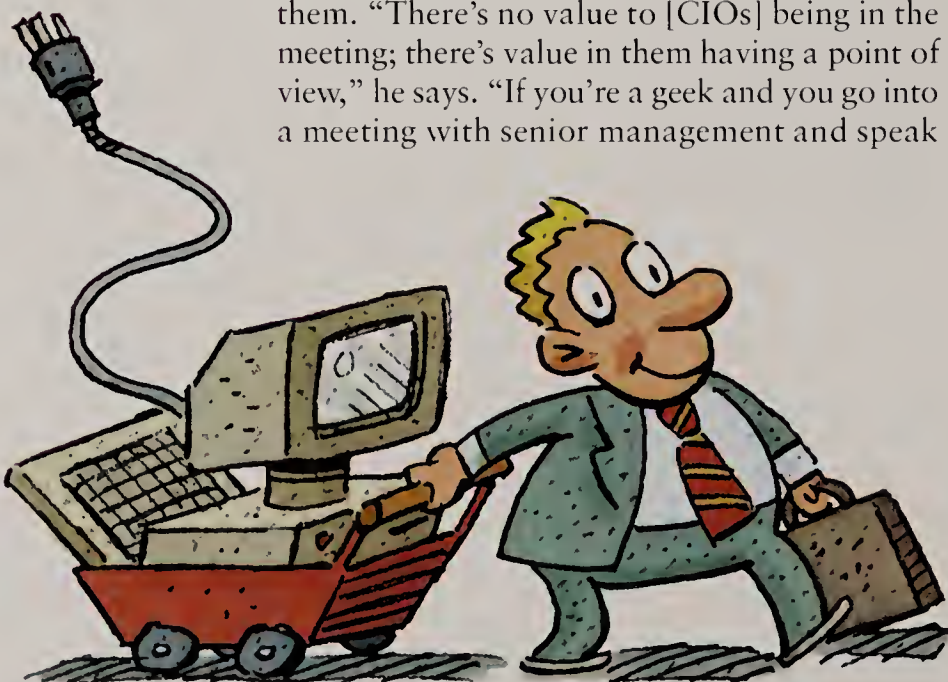
Business managers might be concerned with changes in the business environment, but CIOs have to contend with the rate of technological change, too, Wolf says. To be valuable partners, CIOs have to be aware of changes their managers and peers are concerned about and install a flexible technology infrastructure that will be able to respond to those changes. "Dealing with all of this change and doing it with the view of controlling spending just makes the job harder," he says. "They have to be nimble. They have to be responsive. But they can't spend a lot of money doing it."

The CIO's role is becoming more and more complex. IS executives have more opportunities to be business strategists, but they must tackle strategic challenges while maintaining the level of IS service their bosses and peers expect. Achieving this balance requires the skills of a great communicator—someone who doesn't just preach, but listens. **CIO**

Staff Writer Heath Row can be reached at hrow@cio.com.

Find Out More

For more detailed information on the study, call Ken Norland of Ernst & Young's Center for Technology Enablement at 818 991-0200.



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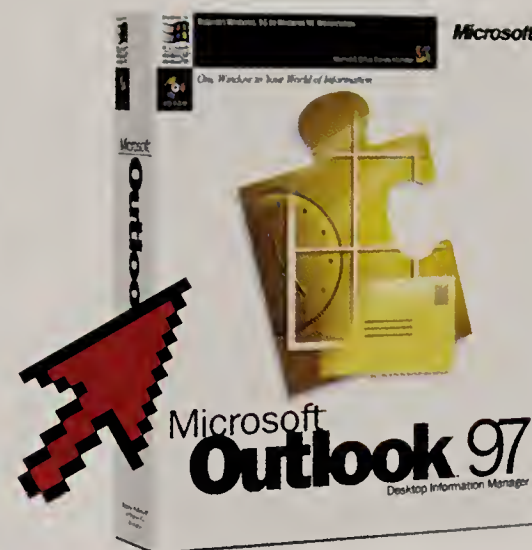
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h Joh			Christy Ruyle	RE: 2 things	Fri 3/7/97
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A Good Staff is Hard to Find ...and Keep

IS executives and consultants discuss the challenges of—and strategies for—doing both

BY RICHARD PASTORE

The Participants

Leonard J. Agostino
Director, IT
MCI International Inc.
Rye Brook, N.Y.

Ray Bender
Program Director,
IT Executive Programs
Gartner Group Inc.
Stamford, Conn.

Jack M. Cooper
Vice President,
Information Management
Bristol-Myers Squibb Co.
New York

Nicholas L. Ioli Jr.
Vice President and CIO
Citizens Utilities
Stamford, Conn.

Steve Raye
Senior Vice President
General Re Services Corp.
Stamford, Conn.

Terry Waters
Vice President,
Executive Programs
Gartner Group Inc.
Stamford, Conn.

DO YOU HAVE

information systems professionals trained in the hottest technologies beating down your door for the chance to work for your company? Neither do most of your peers. With keener competition for scarcer people resources, complicated by the increasing pace of technology change, it's hard to find and retain good help these days. But there are strategies that motivate IS employees to stay—things like training and communicating the value of their contributions. And the HR department, perhaps not much help in the past, can be an unexpected ally. We gathered a group of IS leaders and Gartner Group Inc. executives at Gartner Group's fall 1996 IT conference in Orlando, Fla., to discuss their mutual staffing problems and solutions. Ironically, the executives, members of Gartner's Information Technology Executive Program (ITEP), found that they compete with each other for IS talent in the New York, New Jersey and Connecticut region.

CIO: *Why is it difficult to hire and retain good people today?*

Agostino: Our challenge at MCI is that we're in a very competitive industry based on price. When Sprint comes out with 15 cents a minute—and now it's down to 10 cents a minute—it really cuts the margins to the bare bones. So we have to keep our expenses very close to a flat run rate, and that makes it tough to compete in the Westchester/Fairfield County marketplace where there are a lot of companies competing for human resources.

MCI is also quite a buttoned-down company; we don't offer flex hours, and dress-down days are [allowed only] on a limited basis. Other companies in our area seem to be more flexible in their working conditions, and that makes it more difficult for us to attract people.

Ioli: As with a lot of companies in regulated industries, we hadn't in the

past invested in contemporary technology. We have a mainframe data center in Stamford, Conn., that's circa 1972. I've got CICS Cobol programmers and very [few people with] relational technology experience. In order to migrate to contemporary platforms and address people skill issues while you're doing it, you pay an extremely high price to bring in new people. What we're doing is taking a hard look at outsourcing the maintenance of the existing legacy systems so that we can take that cadre of core-competency business people in IS and train them to do contemporary systems.



"Once people have **six months** of Powerbuilder **training**, their **market value** will rise. Six months later, and they're getting 40 percent **more money** down the street."

—Nicholas Ioli

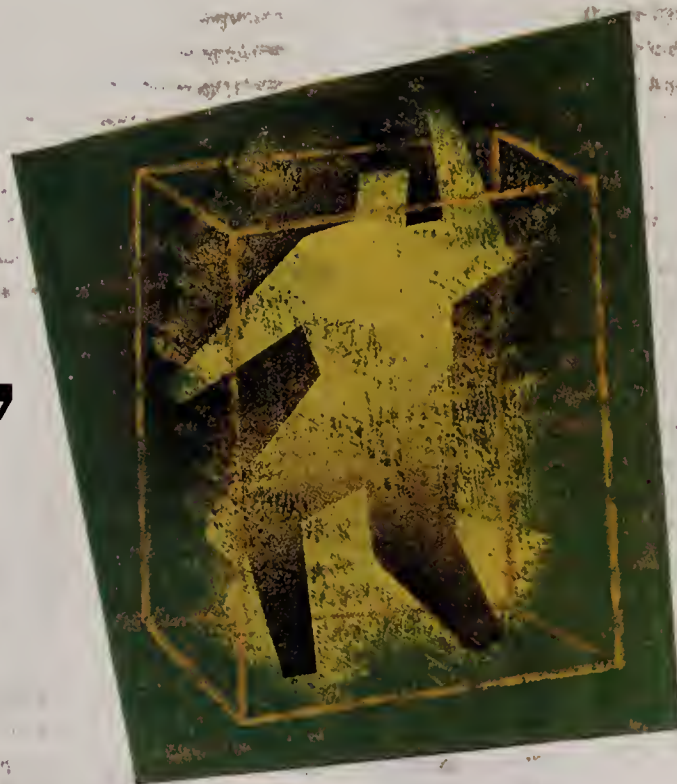
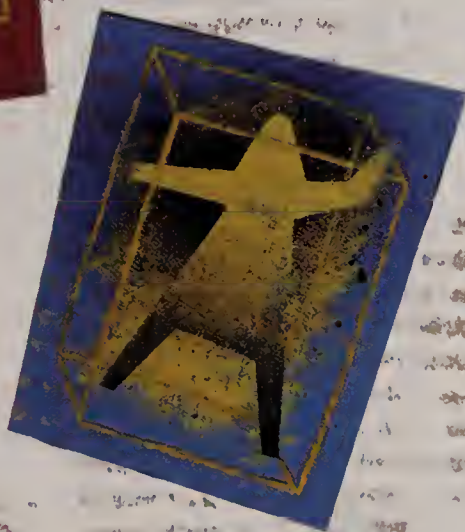
Raye: It isn't any one thing; it's the fact that we're faced with dozens of things. The pace of change is a real challenge as we try to get people up to speed or hire [employees with] those new skills. And once you get people trained, they become really attractive to the competition.

Ioli: That's right. I can invest a lot of money to train people to be quite good Powerbuilder technicians. If I do, I know my turnover will be very, very high because once those people have six months of Powerbuilder [training], their market value will

rise. Six months later, and they're getting 40 percent more money down the street.

CIO: It sounds like a Catch-22. If you train them, they could be lured away; if you don't train them, they

Base your network on
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equipment from
square one,



and that's exactly

where you'll stay.

ROUNDTABLE: I.S. STAFFING

become outdated and bored. Can you provide too much training for your own good?

Ioli: That doesn't come into my thought process at all. I try to give everybody as much training as I can. You have to understand that in the competitive world we're in, there will be fall-off.

Bender: Is it any different than when a Cobol programmer could walk down the street and get 50 cents per hour more? It's probably a percentage—and I bet it's not more than 30 to 33 percent—that turns over in any given skill level over a year or two. And probably it's the same third that always turns over. It's like some houses on the block that are always up for sale.

Ioli: One of the things I look for in a person coming into the company is the "butterfly" factor. Is the person flitting around every nine months to a year? Has he or she had seven or eight different jobs? I have a problem trying to invest my resources in a person with a history like that.

Agostino: If I see a person who changes jobs every year or 18 months, I throw the résumé out.

CIO: *Assuming you don't have unlimited resources to devote to training, how do you identify your top prospects and single them out for advanced training?*



"I bet it's not more than **a third** of any given **skill level** that turns over in a year or two. And probably it's the same third that always **turns over**."

—Ray Bender

Agostino: People who display the right level of ownership in their jobs are singled out because I can't reward everybody. It's like signing your name to a letter. You want it to be letter perfect. Every job you work on should be done as well as you can possibly do it. Also, when there are other people who have input into the project, the person can't say, "It's not my job." So the ones who demonstrate ownership and teamwork get not only the monetary awards but also the training.

Cooper: We look at technology competency and teamwork capability. The more complex the problem, the more we need to coalesce the group [so that it can develop] a winning solution. We have a social architecture, and we want people who can work with others in the company who are critical to the process.

Ioli: You recognize people as individuals. Sometimes good programmers will only be good program-

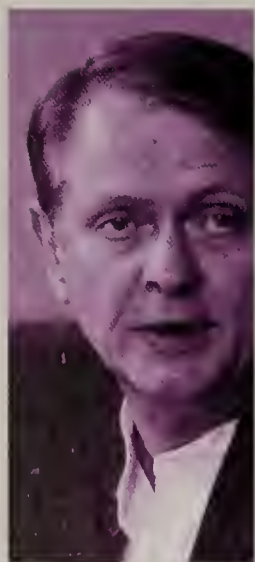
mers; they'll never be good managers. You customize the training for them. It sends a message that you're taking time to understand their needs. It's time-consuming, but that's what separates best practices from the rest.

CIO: *We've been talking about technology training, but how are you instilling the people-oriented, customer service focus that IS staffs are supposed to be cultivating?*

Cooper: We integrate the information management team with the mission team so that there's joint ownership of projects. Users feel they own IM and they become a little more tolerant, and IM has to feel it owns part of the deliverables. To achieve that, we put specific rules in place for the team having to do with deadlines and services. Then we put in bonuses and [distribute] them accordingly. There's also the downside for the failure to deliver a critical system.

Agostino: We've gone to a 90-day release cycle, making the bites we take a lot smaller, and it forces us to work face to face on a daily basis with clients a lot more than [we did] in the past. We don't have those six-, nine- or twelve-month deliverables where you lose track of one another. We get to know clients a lot more intimately, and they also understand our issues a lot more intimately, which builds a much stronger working relationship.

Both IS and clients have money hanging on this. We set objectives at the beginning of year, and a good



"We have a **social architecture**, and we want people who can **work with others** in the company who are **critical** to the process."

—Jack Cooper

deal of our compensation is based on meeting those objectives. And we've brought the compensation package down to a lower level, so more people are able to share in that and understand the value and impact of their work.

CIO: *Many IS organizations are using more and more contract resources these days. How does their presence in your midst complicate the HR equation?*

Agostino: We have probably 40 contract programmers, most doing maintenance on legacy systems. They work side by side with our programmers and analysts and under our project managers. The biggest challenge is the pay differential. We have to pay outside contractors significantly more than [we pay] our own employees. That can be a "demotivator" at times, but the contractors don't get company benefits.

Waters: In those cases, is it important to do knowledge transfer? How do you ensure that it happens?

Ioli: We contractually obligate the vendor to do it.

Raye: We're using a Big Six contractor to help us with data warehousing, and the knowledge transfer is working well with that. We assigned internal staff members to that team, and together they built the first prototype. Then over time, as we get those people up to speed, we'll assign some more people to the team.

CIO: *Do you have other fundamental strategies for motivating the IS staff?*

Ioli: If people know where the ship is going and are well versed in the goals and objectives, they can appreciate their contribution in making

that happen. We try to keep staff as well informed as possible. You can never overcommunicate. I have an entire staff meeting every two months to talk about key issues. It's a four-hour meeting. People in the departments discuss major initiatives, and we have a Q&A period. Having the staff be part of that, be part of a team, and having the team recognized and measured is a combination that's very critical to the motivation formula.

Raye: What I need to do more of is one-on-one [interaction]. The group meetings are good, but when you're looking at key individual motivation and feedback, one-on-one is the best kind of environment for that. It's critical with the management team, but it's also critical with the tech staff, too.

CIO: *Do CIOs have time for that realistically?*

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with a partner who can
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ROUNDTABLE: I.S. STAFFING

Raye: I don't mean to sound glib, but if it's a priority, you've got to do it. Right now, I don't. But if I manage to get to the fitness center three or four times a week, I really ought to get to those one-on-one sessions. After leaving the fitness center, instead of grabbing a yogurt and going back up to my desk, I should grab a sandwich with somebody on the staff, and make it a habit.

Bender: How do you get the right attitude going down through your subordinate managers to the general staff?

Agostino: That's our challenge. How do we ensure that managers are passing the message down to all the employees? One of the things that's different today is that even the lowest-level person has a greater impact on the organization than he or she did 10 years ago. A networking person can bring down hundreds of people now if the LAN server has a problem. So we have to instill in our employees the importance of their jobs and the impact of them doing [things] right the first time.

If you have 25 to 30 managers, obviously not each one of them can do as good a job communicating [as we'd like]. It's incumbent upon me as the department head to participate more in smaller groups, and that's one of the goals I've set for myself.

Ioli: It's critical that managers understand the company and department goals and understand that the people part of that is the most criti-



"A networking person can **bring down hundreds** of people now if the LAN server has a problem. So we have to **instill** in our employees the importance of their **jobs** and the impact of them doing things **right the first time.**"

—Leonard Agostino

cal. They should know that they are compensated for that part, too.

CIO: *HR departments haven't always understood IS's unique staffing needs. How is that changing—and how do you work more effectively with HR?*

Ioli: Just as the IS group has relationship managers working with all of our users, our human resources group has relationships with us. HR has to come out and learn my business—they're learning what's unique, what the challenges are and what my needs are. I've got an HR manager assigned just to IS. We talk about all these key issues, like the large chasm between the skill sets I have right now and the skill sets I need to get to. They understand that companies are competing for the

same resources I am. When I'm trying to rate a job for a Powerbuilder technician, they're not going to sit there and [insist on a lower salary] because "the industry average says this." They know what difficulties I'm having, and they will help me work through that.

Agostino: HR is becoming a client of ours where, in the past, it really hasn't been. We're doing more development work for them, and they need Internet access. So I think they're becoming more familiar with the problems we have. And they are more technically competent than they were three to four years ago.

Raye: Part of the value of HR is in working with us on some of the new job descriptions. But they also have a pretty decent view of the effect of change on the different business units in the organization. So we can bounce ideas off HR to get another read on the business units' pressures and concerns.

Cooper: I like to have a partnership with HR so that they understand the shortages and salary-range issues and become part of the team. It's a role of the CIO to form that alliance with HR. **CIO**



"**Group meetings** are good, but when you're looking at **individual motivation** and feedback, **one-on-one** is the best environment."

—Steve Raye

Managing Editor Richard Pastore can be reached at pastore@cio.com.

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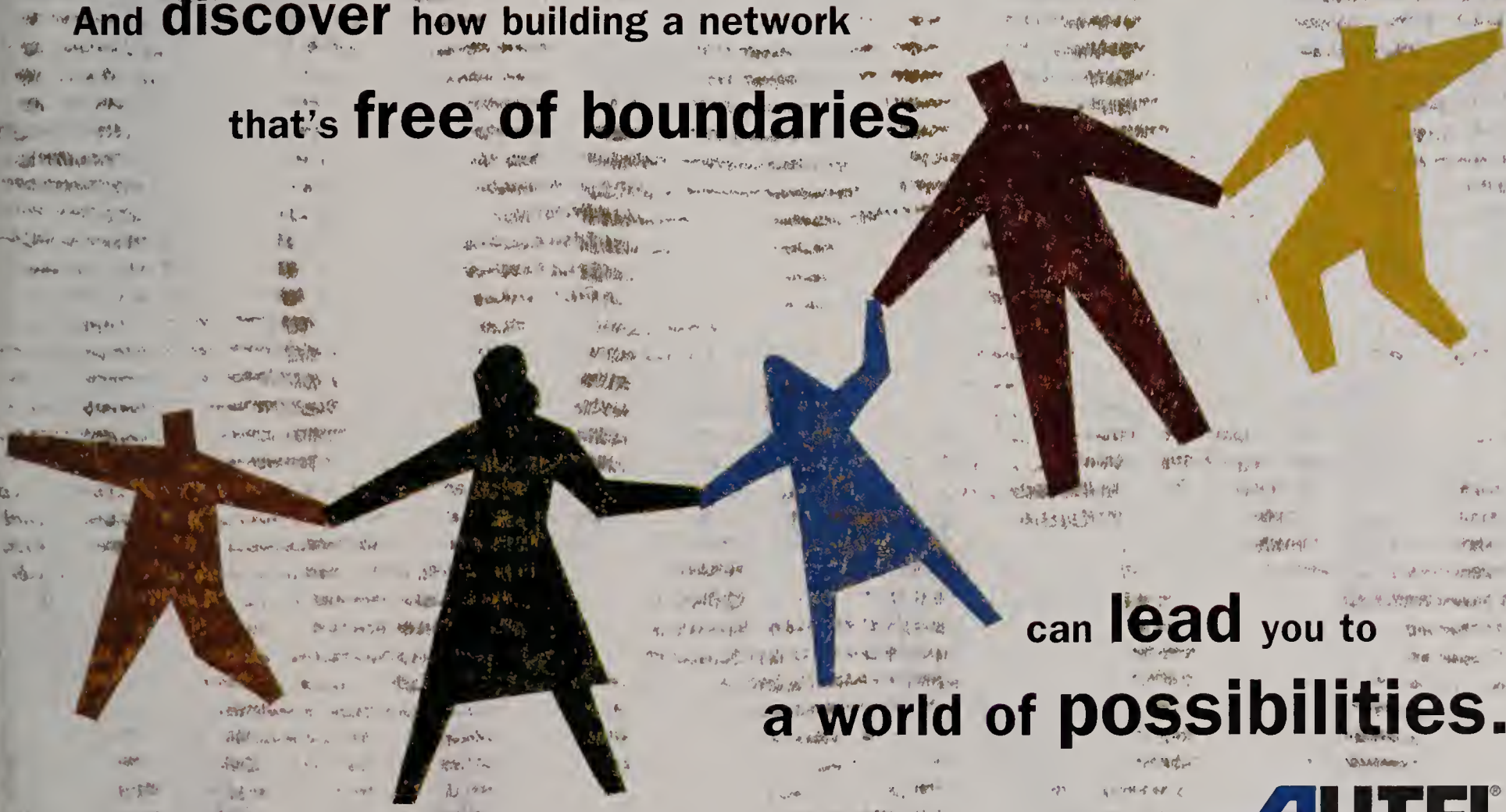
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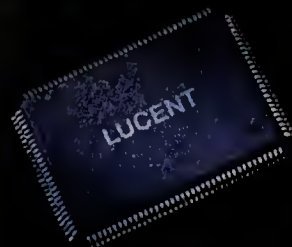
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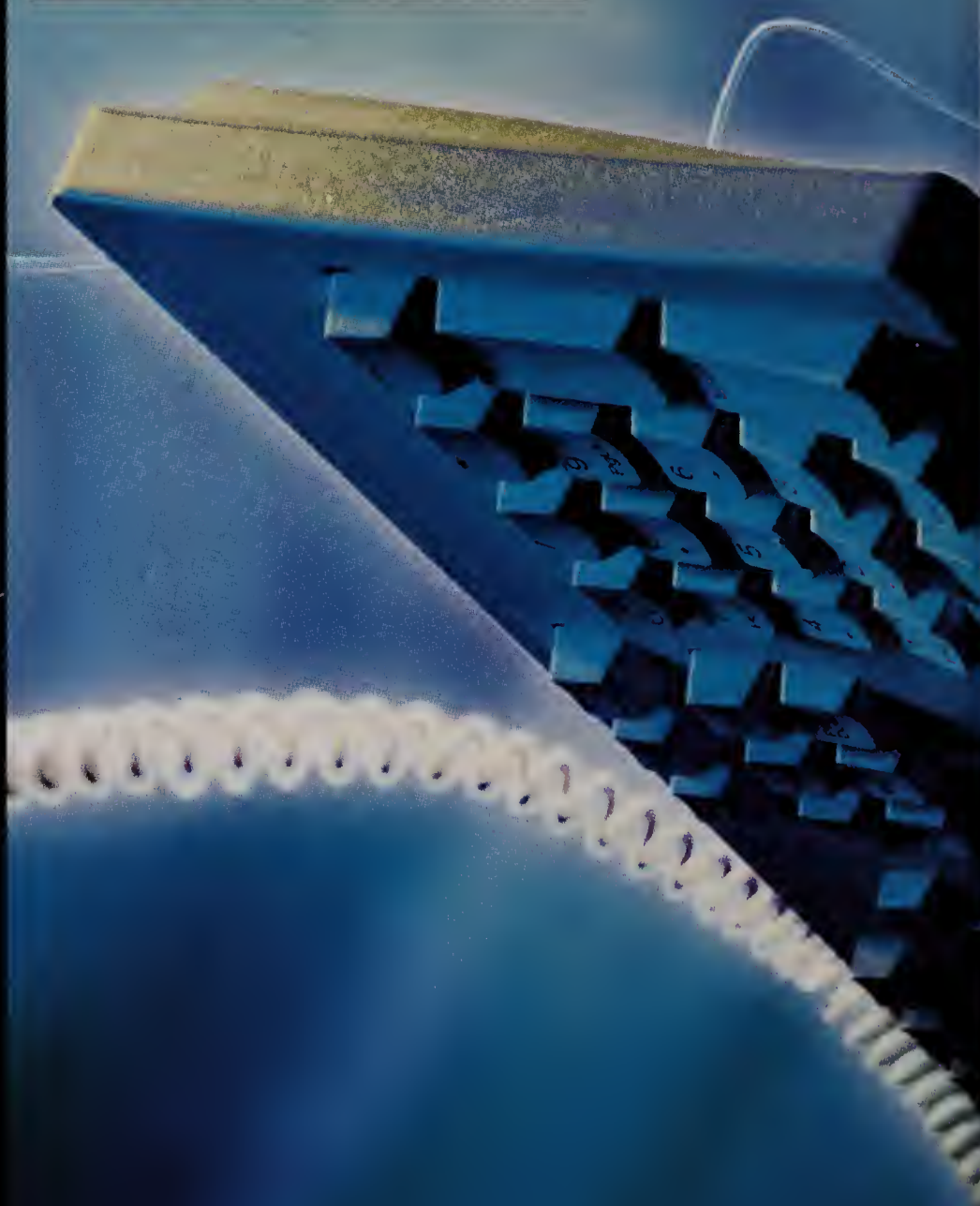


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Webel Without a Clue

Entrepreneurial heavyweight Ezra Poundcake describes his rags-to-slightly-higher-quality-rags career on the Net

IF YOU HAVEN'T MADE A MILLION dollars on the Internet yet, you're not really trying. There are just so many wonderful business opportunities out there that the real challenge is figuring out which ones not to invest in. It's like the build-a-breakfast menu at Denny's: You want both the eggs and the pancakes, but if you also get toast to sop up the yolks, isn't that too much of a good thing? And is there sufficient bandwidth to support it all?

Now I admit that my own initial venture on the Net—Ezra Poundcake's Home Page for Cybersavvy Business People—was not an unmitigated success. The site was, of course, showered with honors: It was rated in the top 97

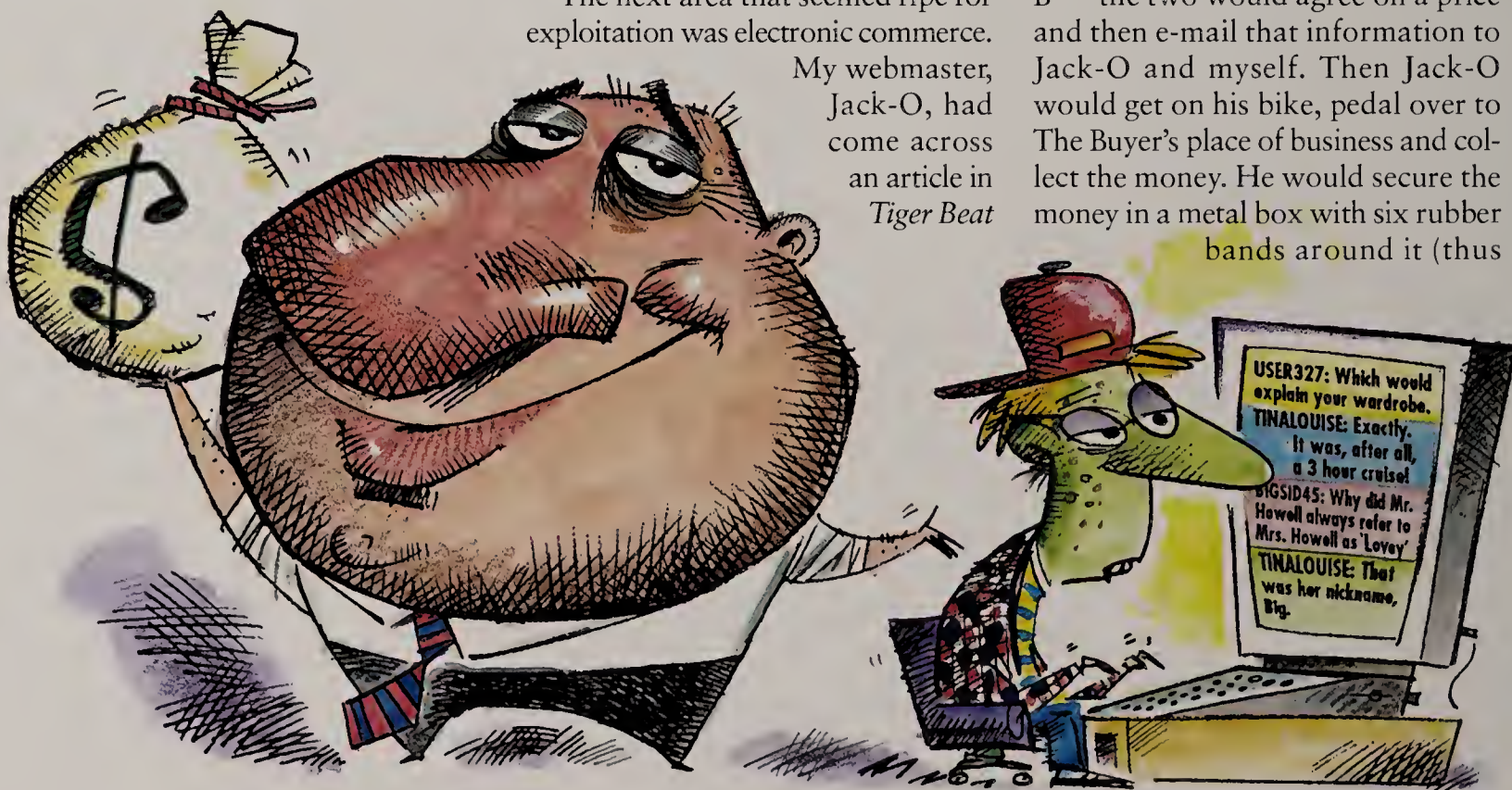
percent of all Web sites by Point Communications (which called it "accessible from the Internet") and it received the Kreme de la Kreme Award from the American Association of Snack Cake Manufacturers. Unfortunately, the idea of supporting the site through an online pledge drive, as described in an earlier column, did little or no mustard-cutting. The fault was probably my own: I had failed to figure into my business plan the expense of creating novel and enticing premiums. After I had spent \$75 hiring Richard Harris to record a dramatic reading of the Yahoo Cool Links section and that *still* did nothing to undam the revenue stream, I decided it was time to cast my Net elsewhere.

The next area that seemed ripe for exploitation was electronic commerce.

My webmaster, Jack-O, had come across an article in *Tiger Beat*

stating that in a recent survey of every single person on the planet over the age of five, 96 percent said they would happily spend upward of \$10,000 a month in online purchases if only a secure payment mechanism could be found. Once more, a bulb burned bright over the Poundcake pate. Of course, I realized that my webmaster's programming skills were probably not up to the task of developing such a system—when I had asked him to create a "back" button for my home page a few weeks earlier he had gone into hysterics, insisting that multimedia was not part of his job description. But Jack-O, while no Marc Andreessen, did possess a quality that made him a suitable standard-bearer for the Internet commerce cause: to wit, after years of playing community college jai alai, he had developed very strong shins.

It was those shins that formed the backbone of my ingenious new business model. Here's how it worked: Whenever someone wishing to buy something—call him, say, "The Buyer"—wanted to conduct a transaction with someone wishing to sell something—call him, say, "Party B"—the two would agree on a price and then e-mail that information to Jack-O and myself. Then Jack-O would get on his bike, pedal over to The Buyer's place of business and collect the money. He would secure the money in a metal box with six rubber bands around it (thus



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thwarting any hackers who might be lurking in the vicinity), place the box in a basket attached to his handlebars and carry it to Party B, who would pay us either a \$1 commission or its equivalent in baked goods.

This plan would have worked brilliantly had it not been for the surprising amount of business we received from overseas. In fact, the vast majority of our orders came from Irkutsk, where, I discovered later, our company name—Wheels of Commerce—translates into “Click here for happy talk.” I also ran up against some unforeseen labor problems: After a few weeks, Jack-O started complaining that pedaling cross-country on a three-speed was scorching his patellas. The capital outlay required for a new bike would have wiped us out. So, regretfully, I began to cast around for an alternate plan.

INSPIRATION STRUCK ME, as it does most of us, during a *Mr. Ed* marathon. I have always marveled at the degree to which Mr. Ed displayed wisdom beyond his age and species, and as I listened to the beloved opening ditty for perhaps the 24th time that night, I wished that I could, in fact, go right to the source and ask the horse. And then it came to me! If I felt this way, then how many other needy souls were out there yearning for the kind words and sage advice of their favorite '60s sitcom stars? A real-time celebrity chat forum would both make money and perform a noble public service. I envisioned families brought together by the wisdom of Robert Young; young women encouraged to follow their dreams by Marlo Thomas; castaways instructed in the art of building exercise bikes from bamboo poles by Tina Louise. Certainly it was unlikely that any members of this exalted constellation would actually agree to participate in such a service. But, as the former crossword puzzle editor of *TV Guide*, I considered myself more than qualified to provide anything users might demand in the way of “content.” To paraphrase that famous *New Yorker* cartoon: On the Internet, no one knows you're not Vivian Vance!

My enthusiasm for the project ebbed

after Jack-O assured me that any type of Internet chat was technologically unfeasible at this time, and that leading pundits—leading pundits other than myself, that is—didn't expect it to be doable until at least the middle of next century. Then, quite by accident, I overheard a

My home page was rated in the top 97 percent of all Web sites by Point Communications, which called it “accessible from the Internet.”

conversation between the head of MIT's Media Lab and the chairman of the World Wide Web Consortium, who were standing behind me at the Sizzler salad bar waiting for refills on the bacon bits. What they said made it pretty clear that people were in fact using chat today, and not just at secret government research facilities disguised as abandoned leper colonies, as Jack-O had hinted darkly was the case.

I confronted Jack-O with the fruits of my research, and he agreed, with considerable ill will, to look into it. Four months later, Ezra Poundcake's Star-Studded Celebrity CyberChat went live.

This was the idea that should have made me rich. In the first two weeks alone our site received a total of 29 visitors, which is 22 more people than I'm on speaking terms with, so the word was obviously out. We decided to start modestly, promoting chats with stars of the secondary and even tertiary sitcom orbits, including such near-giants as Emmaline Henry (the smoldering Amanda Bellows on *I Dream of Jeannie*) and Pat Priest (the luminous Marilyn on *The Munsters*). Recognizing the importance of collecting demographic data, we created a registration form and granted access only to those willing to divulge such revealing psychographic information as their initials and time of birth. Participants were asked to e-mail us an IOU and follow it up with \$5 in cash or arcade tokens whenever convenient.

Things were hunky-dory for a while but

then, like entrepreneurial Icaruses, we flew too close to the sun. Anxious to increase revenues and break that magical 40-hits-per-day barrier, we decided it was time to headline a real series star, albeit someone safely in the “Where Are They Now?” category. To appease Jack-O, who had been

arguing that we ought to start catering to his dewier demographic, we selected Mr. John Travolta, who Jack-O assured me had sunk into oblivion after his—in my valuation—somewhat unseemly rendition of the sweatog known as Vinnie Barbarino. Unfortunately, it appears that Jack-O was unaware of a recent uptick in Mr. Travolta's celebrity status due largely to some motion picture about orange juice. Our

business plan suddenly rendered unviable, we were forced to yank the service and hole up for several days in Jack-O's mother's rec room.

BUT EZRA POUNDCAKE not only learns from his mistakes, he also commits mistakes that others may learn from. When I sat down to analyze these failures, the error message of my ways came back loud and clear—and with it an epiphany. The best strategy for cybersuccess, I realized, is not to create a business *on* the Internet but rather to create a business *about* the Internet! In these early days of Web commerce, those who profit will be vendors not of services but rather of souvenirs.

Which brings me to my latest—and most lucrative—business model: Jack-O and I are now selling T-shirts to companies that want to promote their Web sites. They read, “My parents went to www.yourcompanyname.com, but all I got was this dumb shirt.” We hope to offer them online by the turn of the century. 

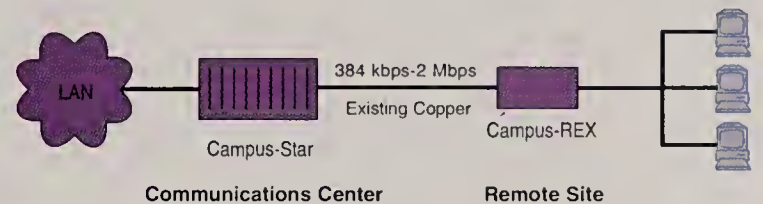
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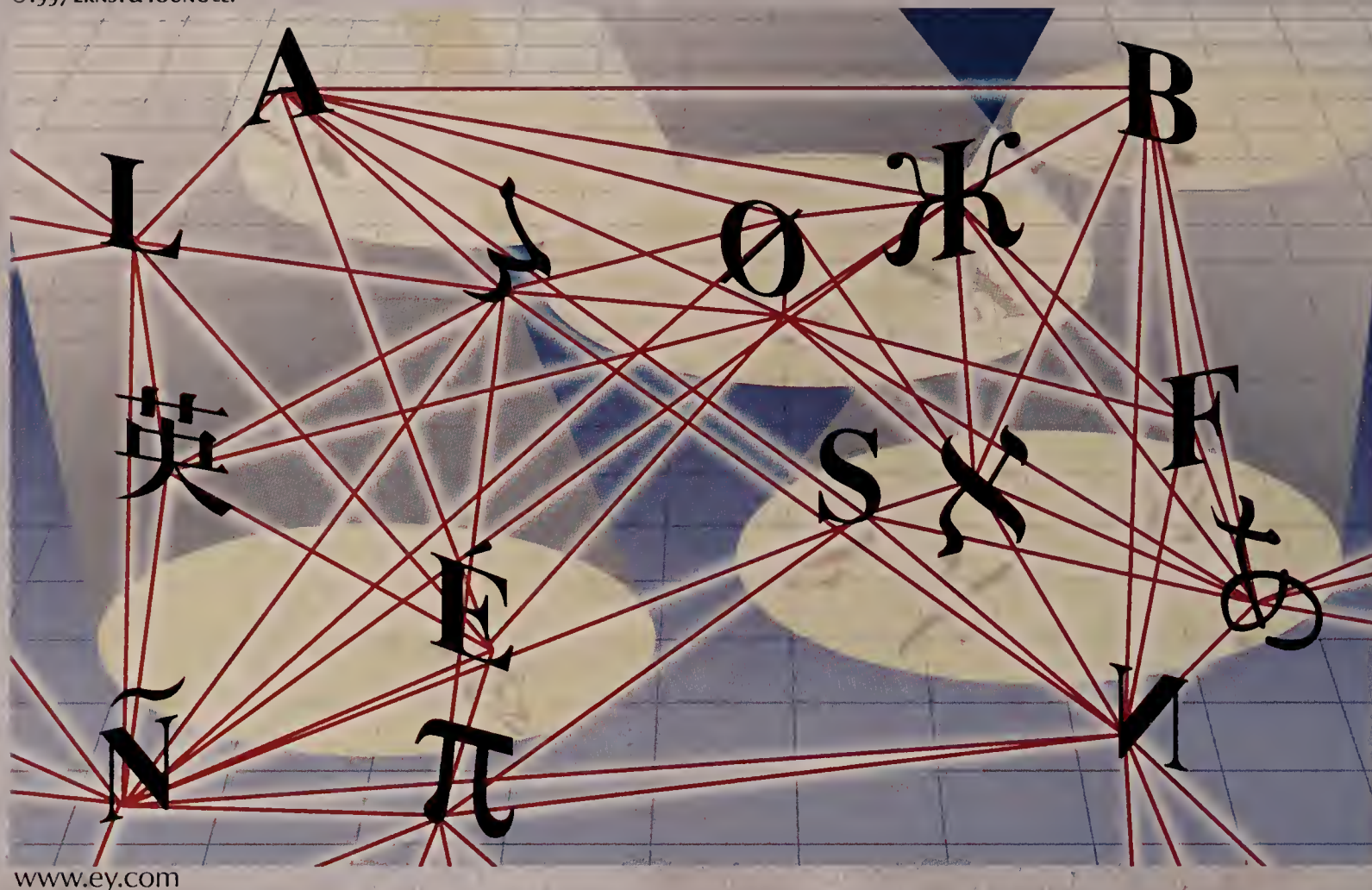
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Edited by Elaine M. Cummings

Real-Time Collaboration Tools

CIOs supporting an increasingly mobile workforce look to group decision support

BY HEATH ROW

BUSINESSES TODAY REGULARLY face situations that require the immediate collaboration of several people in the enterprise. Employees need to be able to make decisions and complete projects efficiently and collaboratively—either through scheduled meetings or hastily organized brainstorming sessions. To some extent, such decision support can be bolstered by groupware and by data, audio and video technologies. But CIOs supporting systems for an increasingly mobile workforce would be wise to consider group decision support, the combination of real-time collaboration tools that let employees work together on, say, a proposal with several other employees no matter where they are—in your office, in their offices or somewhere in Patagonia.

There is no shortage of technologies that make that kind of collaborative communication possible. Recent developments in the convergence of data, audioconferencing and videoconferencing offer the opportunity for remote business interactions to be more like face-to-face

meetings—no more choppy database-driven discussions or conference calls that sound like they've been placed from inside a tin can (see "Data and Telecommunications Convergence," *CIO*, Feb. 15, 1997). And on the groupware side, tools such as Lotus Notes can increase distributed decision making within a company. But both real-time communication tools and groupware

applications have their limitations. The next generation of collaboration tools combines the best attributes of both, taking companies into the brave new world of working together online in real-time.

One reason CIOs typically have shied away from that arena is a fear of inadequate bandwidth. Real-time transmission of audio and video over a network requires enormous bandwidth, and if the network slows, the quality of audio and video suffers, decreasing the efficiency and productivity of the online conference. "It's also hard to justify [real-time transmission] because it requires infrastructure improvements," says Michael Roszkowski, senior consultant and analyst at Creative Networks Inc., a Palo Alto, Calif.-based consulting and research service.

Other reasons relate more to corporate culture. Many people are not used to audioconferencing or videoconferencing, or they object to some types of data conferencing, which, in its more rudimentary forms, resembles chat. "Chat has a pretty bad reputation as being a time waster," says Roszkowski. "But I think it also has the potential of being a productivity enhancer because it gets people to work together. People don't have experience



IN THIS SECTION

Clusters

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ILLUSTRATION BY ROBIN JAREUX

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Emerging Technology

with chat systems, but that might be changing."

Real-time collaboration will have to push hard to get over the hump of user acceptance, which has slowed the technology's development, says Roszkowski. But when people realize just how much work can be done using real-time collaboration tools online, he says, the technology will take off.

An Evolving Niche

A marketing niche is starting to evolve for group decision-support tools, says Steve Lichtman, director of the collaborative work environments laboratory at American Management Systems Inc.'s Center for Advanced Technologies. Basically, the product category includes any tool that helps remote groups work together and communicate in real-time. Tools in that segment combine technologies such as real-time chat and text-based discussion, audioconferencing and Net telephony, data and document conferencing, and desktop videoconferencing. Those technologies can be linked over a local network or used over the Internet as well.

Recent data and videoconferencing standards might pave the way for interoperability and improved performance, particularly on the Web, says Rob Enderle, senior industry analyst at Giga Information Group Inc., a Cambridge, Mass.-based IT consultancy and analysis service. Early this year, companies began to release products that comply with the new batch of standards; vendors that haven't are jockeying for partnerships with such industry leaders as Microsoft Corp. and Netscape Communications Corp.

It's unclear which tools will be most widely adopted, but several companies are offering groupware applications that allow real-time interaction. One such tool is Microsoft's NetMeeting, a real-time communications tool that allows users to share applications and participate in data conferences.

Whiteboard technology might be the first real-time collaboration tool adopted on a large scale because it is easy to understand and use, says Ian Campbell, director of collaborative and intranet

computing at International Data Corp., a sister company to CIO Communications Inc. in Framingham, Mass. Microtouch Systems Inc.'s Ibid PC

Give Me Your Clustered Masses

A primer on cluster basics

CLUSTERMANIA IS sweeping the nation. A cluster is essentially a bunch of servers that work in concert with one another. (Storage devices can also be clustered.) The primary advantage of clusters is increased availability because a failed server can be covered on the fly by others in the group. A secondary benefit of certain types of clusters is increased scalability.

There is enough terminology associated with clusters to make your head spin. Here's a quick primer on the basic types of clusters. In a "loosely coupled" cluster, each server runs its own copy of the operating system, but the entire cluster appears to end users as a single server. Loosely coupled clusters can be divided further into "shared-nothing" and "shared-resource" clusters. In a shared-nothing cluster, each server controls its own memory and storage; for example, Server A must ask permission to use files owned by Server B. In a shared-resource (also referred to as a "shared disk" or "shared database") cluster, every server can read and write to any file, no matter where it is physically located; that requires a nifty little software device called a "distributed lock manager" to keep straight which data is being updated by which server.

You might also hear the term "failover cluster," a cluster in which the backup server does not perform processing until the primary server fails. Failover clusters don't provide scalability benefits.

Then there are "tightly coupled" clusters, in which the entire cluster runs a single copy of the operating system—think of it as "the Borg"



CLUSTERS

from *Star Trek: The Next Generation*.

IBM Corp., NCR Corp. and Data General Corp. were among the first out of the gate with clustered servers; now pretty much every Unix system vendor offers clustering. The technology will likely gain further mainstream prominence with Microsoft Corp.'s release of Wolfpack, its evocative name for clustering functionality to be built into Windows NT.

Wolfpack's first whack at clustering, due this year, will primarily provide failover capability, with more advanced shared-nothing features to follow in 1998. In the meantime, you can boost NT's "clusterability" with cluster-conscious middleware such as Tandem Computer Inc.'s ServerNet technology or NetFrame Systems Inc.'s ClusterData products.

Microsoft is counting on clustering to boost NT's appeal for high-availability applications. "Microsoft is catching up, but it's still several years behind Unix," says Brian Richardson, program director at Meta Group Inc. —Derek Slater

whiteboard, made by Microtouch's Business Products Division in Tewksbury, Mass., uses resistive-touch technology to pinpoint the exact location of

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a mark made on a special whiteboard. Instantly, the mark's position is transferred to Ibid's software, which is installed on desktop PCs, and remote users can track and comment on brainstorming or presentation sessions without attending the meetings. Ibid's file system allows users to save whiteboard snapshots, organize them into a slide-show format and incorporate them into other digital documents, including e-mail. Ibid becomes especially practical when used with other real-time collaboration tools such as NetMeeting, says Randy Smith, vice president of marketing at Microtouch Systems and general manager for the business products division. "As Internet software applications begin to take hold, [the whiteboard] is probably the most natural medium for interaction," he says. "You can't write with a mouse."

Microfield Graphics Inc. in Beaverton, Ore., offers another whiteboard-based Internet application called Softboard. With Softboard, users also can share whiteboard-based sketches and notes with remote PC users, incorporate drawings into documents and e-mail, and, when used with PictureTalk Inc.'s PictureTalk application, combine whiteboard drawings with real-time, read-only views of a user's desktop.

PictureTalk's technology integrates features of whiteboards, videoconferencing and desktop sharing, says Dave Stuart, director of marketing for PictureTalk. By using a green capture frame that overlays the portion of the desktop the user wants to share with others, a person can show text documents, Microsoft Powerpoint presentations and files from other applications, Stuart says. "Most people want to share information and what's on their desktops when they're meeting regularly," he says. "The nice thing about working in that kind of environment is that you don't have to cut and paste to a whiteboard or a canvas. Users can stay in their application when they're communicating."

At Santa Clara, Calif.-based 3Com Corp., real-time collaboration tools are coming into play as the company's Technology Development Center creates 3Com's intranet, which the organization intends to link to Notes, says Bob Noakes, Internet commerce marketing manager for 3Com. The company is testing and considering PictureTalk because it allows real-time collaboration independent of platform and operating system. "We can have instant real-time collaboration on a program, a document, whatever it needs to be," Noakes says.

Noakes says PictureTalk might solve the company's interoperability problems because it works as a bridge between applications. If one person is using NetMeeting and another is using ProShare, Intel Corp.'s videoconferencing tool, they still can

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It's a Jungle Out There

THE INTERNET'S MAJOR SELLING POINT—namely its access to vast amounts of information—is also one of its biggest drawbacks. While there's lots of cool and really interesting stuff online, keeping track of the best sites and the nature of the information contained within them can be a frustrating task.

Enter Hitachi Ltd.'s Hitachi Network Products Group out of Santa Clara, Calif. The company's **ZooWorks** series of products aims to solve the problem of rediscovering sites that already have been searched. The ZooWorks Research for Teams is a server-based productivity tool that automatically creates an index of sites previously visited by a group of users. "The product helps people create a library of information that's useful to a group," says David J. Toth, vice president of Hitachi Network Products Group.

The product works between a Web browser and any HTTP Internet server. The index is automatically created without the need to bookmark sites because ZooWorks records all the Web pages and HTML pages visited. Information in the index can be searched by date, keyword and URL. So if you know you visited a really great site about market research techniques last Tuesday, you should be able to locate it quickly.

Sites that have been visited by a team can be categorized into easily accessible folders. For example, sites that relate to your competition can be stored in a shared folder labeled "competitive products." Users can also annotate the index to indicate which sites are particularly useful or to specify what kind of information they contain.

The product works for groups of 50 people or less and sells for \$795. (The price includes 10 copies of the personal product.) System requirements include a Windows NT Server or Windows 95, Internet or intranet access, at least 10MB of hard drive space and a browser that supports HTTP 1.0, HTML 2.0 or higher. For more information, call 408 588-3132. Or, download a free trial copy from www.zoosoft.com/zooworks.



Open to 2000 Suggestions

WITH THE YEAR 2000 FAST APPROACHING, corporations and government agencies are beginning to think about how much the crucial data conversion will cost them. With conservative industry estimates exceeding \$200 billion (45 to 50 percent of that being incurred in testing and validating changed programs and files), clearly a workable and post-2000 solution would be invaluable. New software from UniKix Technologies of Phoenix, Ariz., can generate real cost reduction as organizations continue to work on the year 2000 project.

Open 2000 is designed to significantly lower the price of year 2000

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communicate and trade data. "When you talk about data conferencing, you're controlling the environment. What you can't do is transport," he says. "For me, [online collaboration] is about being able to not only collaborate in real-time in terms of what we see but to actually be able to exchange information."

Because PictureTalk allows users only to view a shared document, not everyone can make changes to it. "We avoided the application-sharing model because we don't think that's the way people work. We think people are more interested in showing things to each other," Stuart says. "Data collaboration is still very much what [PictureTalk does]. Data conferencing is much closer to what we do than videoconferencing."

And if companies want to use audioconferencing or videoconferencing tools, those applications are available. Still, people aren't going to turn to either unless it's as easy as a face-to-face meeting, says Dave Andonian, vice president of PictureTel Corp.'s personal systems division. "People are looking at the quality of video very closely. The expectation is broadcast quality. Audio is as important—or sometimes even more important—than video. It has to be as easy as picking up a phone."

Vendors whose origins are in audioconferencing and Net telephony, such as VocalTec Ltd., are also heading in the direction of multiple-media conferencing. With the release of Internet Conference, VocalTec's technology is starting to evolve into a full-media client, says Matthew Finnie, conferencing product manager for VocalTec in Northvale, N.J. With Internet Conference, users can share Microsoft Powerpoint, Word and Excel documents with other users; include the Web in networked presentations; use a whiteboard; and integrate VocalTec's Internet Phone and text-based discussion groups and chat. Using object linking and embedding (OLE), Internet Conference works around bandwidth concerns by transmitting updates and edits only when a correction is made rather than streaming a steady flow of data, which takes more network resources.

While companies can integrate audioconferencing and videoconferencing tools with their existing groupware and applications, some enterprises are moving toward applications that support full-fledged meetings on the Web. Microsoft's NetMeeting is leading that charge, but there are a couple of areas in which group decision support can be improved.

The main appeal of group decision support and online meetings might be one of metaphor. Rather than focus on Web pages, documents or files, tools such as NetMeeting, Farallon Communications

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solutions for legacy mainframe applications by providing a low-cost testing and validation environment for year 2000 code changes.

Typical year 2000 projects are creating a 20 percent increase in workload on mainframes just for testing and validation, translating into upgrade and outsourcing costs of millions of dollars. Open 2000 reduces the cost of testing and validating year 2000 changes made to legacy applications by providing a mainframe-compatible test environment on open-systems Unix servers. And Open 2000's integrated set of year 2000 and client/server migration tools and services provides the added benefit of being able to be run in a three-tiered client/server environment on open-systems servers after the year 2000 project is over.

Open 2000 provides an MVS- and DOS/VSE-compatible test environment for Cobol applications running in batch or under CICS and using either VSAM files or DB2 databases. Instead of tying up expensive mainframe cycles for year 2000 compliance testing, enterprises can offload that work to Open 2000 on their choice of 15 Unix servers. Pricing starts at \$40,000.

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Cybercasting Call

FIRST, THERE WAS TELECONFERENCING. Then videoconferencing. Now, as one would naturally expect, the presence and technological prowess of cyberconferencing is available and aimed at pushing the virtual conference from the boardroom and convention hall right onto the desktop PC. **Cybercasting**, a new product from Cheetah Broadcasting, a division of Cheetah Systems Inc. based in Fremont, Calif., is designed to erase the technical limitations of audioconferencing and videoconferencing.

Cybercasting uses common computer networks as the means of communication and offers meeting or conference attendees two-way communication, using audio, text, graphics and video in a more flexible and cheaper way.

Cheetah Broadcasting receives an audio feed from a telephone and turns it into a text transcript in real-time, with uppercase and lowercase letters. The text feed can be synchronized with audio and accompanied

by graphical images, enhancing the meeting, presentation or conference experience and comprehension for message recipients.

Compatible with Windows, Mac or Unix environments, Cybercasting runs via the Internet and TCP/IP networks, and is accessible through CompuServe or America Online. For a demo, visit www.cheetahcast.com; for more information and current pricing, contact Cheetah at 800 800-8779.



Inc.'s Netopia Virtual Office and DataBeam Corp.'s neT.120 Conference Server create a virtual meeting place on a network. Within that meeting place, people can hold real-time discussions on the Web using text-based audioconferencing or videoconferencing, share documents and applications using a dataconferencing tool—such as DataBeam Corp.'s FarSite—or create a shared file cabinet of documents that the team needs to access together.

DataBeam's neT.120 Conference Server is basically a data bridge tied into Web server and browser technology, says Jim Clifton, neT.120 product manager at the Lexington, Ky.-based company. Because the user interface is based on hypertext, neT.120 is easy to use, and the server's Java-based drag-and-drop file transfer protocol makes it easy to transmit files and disseminate information. "One of the knocks on conferenc-

ing, certainly on the video side, is that it's difficult to do," Clifton says. "With just the browser, it's passive. Java allows instant application access."

Meetings on the Net stress that the people involved are important, and by adding people to the information mix online, more work can be done, says Kelly Looney, director of marketing for Activeverse Inc., an Austin, Texas-based developer of networked workspaces. "You've got a lot of information being presented. "[People are] the critical piece that's missing," Looney says. "What we want to do is provide a more immersive environment that shows the information as well as the people in the place."

Net-based meeting applications are a step toward more fully rendered online meeting places that draw on virtual reality technology. By including functions that signify presence, gestures and emotions, those places can mirror the phys-

ical work world more closely, says Ellen Isaacs, computer interface designer for Electric Communities, a Cupertino, Calif.-based developer of virtual environments. Impromptu meetings and collaboration often yield more results than scheduled, structured meetings, and knowing what co-workers are doing within applications and groupware could encourage immediate, effective and efficient communication online. "A lot of business collaboration software is designed around a task. The focus on the social interaction isn't there," says Isaacs. "Instead of having people travel for a two- or a three-week course, all you really want to do is get people together to talk. It's not the same as a face-to-face experience, but it's rich and interesting in its own way." **CIO**

Staff Writer Heath Row can be reached at hrow@cio.com.

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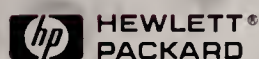
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PROMPT, PROPER compensation of the sales team is an important competitive weapon for global organizations that rely on direct worldwide sales forces. For Amdahl Corp., a \$1.5 billion provider of enterprise computing products and services, the stakes are particularly high: The Sunnyvale, Calif.-based company maintains worldwide sales offices, staffed by geographically dispersed teams charged with selling an increasingly broad mix of products and services. In 1994, Amdahl's IS group got together with users to build a sales compensation system that could quickly accommodate shifting compensation plans for the company's more than 1,200 commissioned employees. Since going online, Amdahl's sales compensation system has saved the company money while supporting a multitude of pay and bonus plans.

Prior to 1994, branches on three continents—North America, Asia and Europe—were using separate sales compensation systems. Those systems were limited because they could perform only simple calculations and they were incompatible with each other. Complex computations involving several types of commission paid to team members at different locations required analysts to perform manual calculations. The reliance on manual processes often resulted in such errors as overpaid bonuses—nice for salespeople but costly for Amdahl. And since each system was standalone, employees at headquarters who needed to consolidate information had the time-consuming and error-prone task of reentering data.

Each year, IS spent more than six months on application development efforts so that disparate compensation systems could accommodate new incen-

Amdahl's Sales Compensation System

Vital Statistics:

- **Organization:** Amdahl Corp., Sunnyvale, Calif.
- **Application:** Sales compensation system
- **Technologies:** Antares Alliance Group's ObjectStar rapid application development software, which incorporates an object management architecture; an Amdahl 5595M mainframe running IBM Corp.'s MVS; Intel Corp. Pentium- and 486-based PCs and laptops
- **Scope:** Eighteen financial analysts and approximately 300 sales executives use the system that serves more than 1,200 employees
- **Sponsor:** David B. Wright, executive vice president, enterprise computing group
- **Objective:** Develop flexible and easy-to-use sales compensation system to meet the changing needs of a worldwide sales force
- **Payoff:** Saved \$1.5 million annually in reduced maintenance, programming and administrative costs; improved employee morale; and increased Amdahl's ability to create appropriate compensation plans for new products

tive programs and product promotions. No sooner were the group's efforts completed than the time came to implement the compensation plan for the new fiscal year. "In a compensation system, time is of the essence," says JoAnn Ashman, vice president and CIO of the enterprise computing group. Particularly when it comes to commissions, systems need to be flexible enough to support rapid change. And in Amdahl's case, that is critical because its products and services are often customized and involve hundreds of components. All told, Amdahl was spending more than \$900,000 annually to maintain and program compensation systems that couldn't keep up with the business.

In response, David B. Wright, executive vice president of the enterprise computing group, organized a task force comprising IS, finance and sales staff members. The group's goal was to build a uniform sales compensation system that was flexible and easy to use, and could calculate compensation on demand quickly, support worldwide operations and be main-

tained by users. After six months of prototyping and another six months of final coding, the system went live in October 1994.

The new system is based on Antares Alliance Group's ObjectStar software that incorporates object-oriented technology. It flexibly supports a variety of compensation plans by automatically calculating bonuses, commissions and advances. At last count, financial analysts were using the system to crunch numbers for 100 different compensation plans and more than 240 types of commissions and bonuses. The analysts are also able to trace and correct errors easily by using worksheets that show every step of the calculation process; as a result, they can resolve problems and questions quickly. "Users want to control their own destiny," says Eugene Neiman, the company's technical architect who designed the system. "Now that they can change the systems [without IS intervention] to meet business needs, they are empowered."

Amdahl has saved more than \$1.5 million annually in reduced programming and maintenance costs. And by giving sales managers the ability to quickly design compensation plans that reward desired behavior, company officials are convinced that the system is a competitive weapon that motivates salespeople.

Paula Jacobs is a consultant and writer based in Framingham, Mass. She can be reached at pjacobs@world.std.com.

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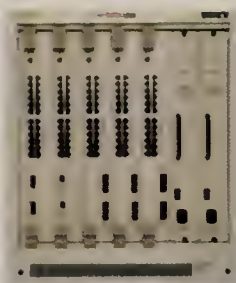
Each switch provides true plug-and-play capability for quick and easy set-up. Then you can expect the fast, reliable performance of an award-winning* switch family. Key features include Layer 3 switching with broadcast control and embedded per-port RMON. SecureFast™ advanced management applications allow for point-and-click adds, moves and changes, as well as enhanced security. You'll enjoy not only a lower cost-per-port (in many cases, lower than today's shared-access solutions), but reduced operating expenses over the long haul.

Choose the switch that fits. For big appetites, the SmartSwitch 6000 is a new 5-slot modular solution with distributed switching, fault tolerance and redundant power. A fully loaded SmartSwitch 6000 can provide switched Ethernet for up to 120 users with Fast Ethernet, FDDI and ATM connectivity.

On the lighter side, the SmartSwitch 2000 family of workgroup/desktop switches offers the same functionality as the 6000 in a standalone model. The new SmartSwitch 2200 is the first in this line and features 24 ports, two Fast Ethernet ports and a high-speed uplink for FDDI or ATM.

High-end features. Affordable price. Doesn't get much simpler. Take an early lunch break and call 603-337-0930 or visit us on the Web at www.cabletron.com.

SmartSwitch 6000



SmartSwitch 2200



*SmartSwitches named Editor's Choice in *Network Computing* magazine (1/15/97)

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